

Professor
Department of Computer Science
William Paterson University
300 Pompton Road, Wayne, NJ 07470, USA
kuc@wpunj.edu

[WPU Profile](#), [ORCID](#)
[Data Science Research Lab](#)

EDUCATION

- Sep 1985 – *Doctor of Philosophy in Computer Science*
Jun 1989 **Northwestern University**, Evanston, Illinois, USA
Dissertation: *Incremental Compilation of Rules in Indefinite Deductive Databases*
Advisor: Dr. Lawrence J. Henschen
Awards: Research Assistantship, Teaching Assistantship
- Jan 1980 – *Master of Science in Computer Science and Applications*
Jun 1982 **Virginia Polytechnic Institute and State University**, Blacksburg, Virginia, USA
Thesis: *The Design and Implementation of a Language Environment for Evaluating the Programming Task*
Advisor: Dr. Timothy E. Lindquist
Awards: Teaching Assistantship, Research Assistantship
Upsilon Pi Epsilon Honor Society Membership
- Sep 1976 – *Bachelor of Science in Computer Science (Cum Laude)*
Dec 1979 **Utah State University**, Logan, Utah, USA
Awards: Academic and University Scholarships, Teaching Assistantship
Senior Certificate of Alpha Lambda Delta Scholastic Honor Society

ACADEMIC EXPERIENCE

- Sep 2002 – **William Paterson University (WPU)**, Wayne, New Jersey, USA
Present *Interim Department Chair* – Department of Computer Science (Jun 2026 – May 2027)
Professor – Department of Computer Science (Sep 2014 – Present)
Associate Professor – Department of Computer Science (Sep 2009 – Aug 2014)
Department Chair – Department of Computer Science (Jul 2007 – Jun 2013)
Assistant Professor – Department of Computer Science (Sep 2002 – Aug 2009, **Tenured:** Sep 2007)
Awards: Faculty Excellence in Research, Scholarship, and Creative Expression Award (May 28, 2026)
Outstanding Partnership Award for Best Practices in Employer Relations, Career Development Advisory Board (May 6, 2011)
Upsilon Pi Epsilon Computer Science Honor Society Faculty Membership (Apr 22, 2010)
Faculty Excellence in Service Award (May 19, 2009)
- Sep 1994 – **New Jersey Institute of Technology**, Newark, New Jersey, USA
Jul 2000 *Adjunct Professor* – Department of Computer and Information Science
- Sep 1985 – **Northwestern University**, Evanston, Illinois, USA
Jun 1989 *Teaching Assistant* – Department of Electrical Engineering and Computer Science (1986 – 1989)
Lecturer – Department of Electrical Engineering and Computer Science (Jun 1988 – Aug 1988)
Research Assistant – Department of Electrical Engineering and Computer Science (Dec 1985 – Jun 1986): Research project titled “Validation of Logical Stability Measures”, sponsored by

Rome Air Development Center through IIT Research Institute under contract F30602-83-C-0026 and subcontract A06097-1.

- Jan 1980 – **Virginia Polytechnic Institute and State University**, Blacksburg, Virginia, USA
Jun 1982 **Research Assistant** – *Department of Computer Science* (Jan 1981 – Jun 1982): Research project titled “*Human-Computer Interactions and Decision Behavior*,” sponsored by the Office of Naval Research under contract N00014-81-K-0143.
Teaching Assistant – *Department of Computer Science* (Jan 1980 – Dec 1980)
- Sep 1976 – **Utah State University**, Logan, Utah, USA
Dec 1979 **Teaching Assistant** – *Department of Applied Statistics and Computer Science* (Jan 1979 – Dec 1979)

INDUSTRY EXPERIENCE

- Jul 2000 – **IBM**, Short Hills/Morristown, New Jersey, USA
Jul 2002 **Award:** Obtained the largest bonus award in the position of Senior I/T Specialist for achieving the highest (extraordinary) performance evaluation (Dec 2000)
Senior Information Technology Specialist (*IBM Global Services*)
- Oct 1996 – **AT&T**, Murray Hill/Short Hills, New Jersey, USA
Jun 2000 **Awards:** True Insider Award – Award for Outstanding Achievement (Sep 1999)
Admiral’s Club Award – Certificate of Recognition (Feb 1998)
Senior Technical Staff Member – *Data Mart/Data Mining District (Insight Division)*
- Jul 1989 – **Bellcore (Bell Communications Research)**, Morristown/Piscataway, New Jersey, USA
Sep 1996 **Awards:** Recognition Awards (Nov 1993, Mar 1995, April 1995)
Team Appreciation Award (May 1995); Team Recognition Award (April 1994)
Vice Presidential Fund Awards (Oct 1993, Feb 1994)
Systems Analyst – *Network Capacity Management Systems Laboratory (Software Systems Area)* (Jan 1995 – Sep 1996)
Member of Technical Staff – *Operations Solutions Laboratory (Technology Resources Area)* (Jan 1993 – Dec 1994), *Network Capacity Provisioning Laboratory (Operations Tech. Area)* (Jan 1991 – Dec 1992), *Planning and Engineering Applications Laboratory (Technology Applications Area)* (Jul 1989 – Dec 1990)
- Nov 1982 – **Kessmann and Associates, Inc.**, Houston, Texas, USA
Aug 1985 **Senior Software Systems Engineer** – *Traffic and Transportation Control Systems*

RESEARCH GRANT / AWARD / CONSULTING

ACADEMIC GRANTS:

- Jun 1, 2026 – **Co-Principal Investigator** for NSF 25-514 (S-STEM: Scholarships in Science, Technology, Engineering, and Mathematics Program. Award Number: 2527737. Award Amount: \$2,000,000.00). Project Titled “*Revised Implementation of a Mathematics and Computer Science Scholars Program*.” Provide faculty mentoring, research assistantships, internships, and create meaningful pathways to STEM careers and graduate study for low-income undergraduate students in mathematics and computer science.
May 31, 2032 <https://www.wpunj.edu/cosh/mac-scholars-program/>
- Apr 1, 2022 – **Principal Investigator** on a grant from the New Jersey Office of the Attorney General, through a subaward from Hackensack Meridian Health. Project Titled “*Evaluation of the New Jersey Hospital-Based Violence Intervention Program (NJVIP) of Meridian Health*.” Research involves natural language processing, data & text mining, and machine learning on hospital data. Award Amount: \$149,501.00.
Dec 31, 2022
- Apr 1, 2022 – **Principal Investigator** on a grant from the New Jersey Office of the Attorney General, through a subaward from Hackensack Meridian Health. Project Titled “*Data Management for New Jersey Hospital-Based*”
Dec 31, 2022

Violence Intervention Program (NJVIP) of Meridian Health.” Research involves data management, data science, and big data analytics on hospital data. Award Amount: \$149,663.00.

Oct 1, 2020 – **Co-Principal Investigator** for NSF 20-526 (S-STEM: Scholarships in Science, Technology, Engineering, and Mathematics. Award Number: 2028011. Award Amount: \$1,000,000.00). Project Titled “*Support Undergraduate Mathematics and Computer Science Students with Scholarships and Culturally Responsive Mentoring.*” Recruit, mentor, and supervise research for Mathematics and Computer Science (MaCS) Scholars to support the retention and graduation of low-income and talented STEM students. <https://www.wpunj.edu/cosh/mac-scholars-program/>. No-cost extension in 2025-2026.

2015 – 2019 **Collaborator** for the NSF *NECST (Networking and Engaging in Computer Science and Information Technology)* scholarship program in Northern New Jersey with Montclair State University (MSU). Awarded \$40,000.00 from NSF over 3 years for scholarships and related activities for William Paterson University students to attend a graduate program in the Computer Science Department at MSU. Participating universities also included Saint Peter’s University and Seton Hall University. An NSF grant of \$624,542.00 was awarded for the program. Award Number: 1259758. No-cost extension in 2018–2019.

NSF AWARD:

Jul 21, 2023 – **Principal Investigator** for the NSF’s ACCESS (Advanced Cyberinfrastructure Coordination Ecosystem: Services & Support) Program. Award Number: CIS230163. Approved Credits: 750,000. Project Titled “*High-Performance Computing Capability for the Data Science Research Lab at William Paterson University.*” Utilized supercomputing facilities nationwide for machine learning, data and text mining, natural language processing, big data analytics, and data science applications.

INDUSTRY GRANTS:

2019 – 2024 Awarded \$10,000.00 from the UPS Foundation of UPS for the *UPS Computer Information Technology Lecture Series* for the Computer Science Department at WPU (Second Award).

2014 – 2019 Awarded \$10,000.00 from the UPS Foundation of UPS for the *UPS Computer Information Technology Lecture Series* for the Computer Science Department at WPU (First Award).

Summer 2015 Awarded \$20,000.00 from PSEG for the *PSEG Pre-College STEM High Summer Program* at WPU (Collaborated with Institutional Advancement and Center for Continuing and Professional Education). Developed and taught a new course, “Virtual World,” for this program.

Jun 2008 Awarded \$16,914.10 Equipment Grant from the Provost’s Office at WPU and \$15,080.90 from Sun Microsystems Educational Matching Grant to purchase a Sun SPARC Enterprise T5220 Solaris Unix Server (8-core 1.2 GHz UltraSparc T2 processor, listed price: \$31,995.00) for the Computer Science Department at WPU.

RESEARCH CONSULTING:

Jan 1, 2023 – **Research Scientist** for the Healthcare Approaches to Justice Collaborative (HAJC) at Montclair State University – working on a grant from the New Jersey Office of the Attorney General through a sub-award from Hackensack Meridian Health (Grant Number: GR00729). Research involves natural language processing, data & text mining, machine learning, databases, and big data analytics on patient/demographic data.

Sep 2022 – **Consultant/Technical Advisor** for Dr. Sheetal Ranjan’s sub-award (\$233,049) in the Department of Justice Studies & Sociology at Montclair State University. Project titled “*New Jersey Hospital-Based Violence Intervention Program at Jersey Shore Medical University.*” Project Director: Ramon Solhkhah, New Jersey Office of the Attorney General. (\$1,428,571). Research involves natural language processing, data & text mining, and machine learning.

May 2021 – **Consultant/Technical Advisor** for Dr. Sheetal Ranjan’s sub-award (\$592,539) in the Department of Justice Studies & Sociology at Montclair State University. Project titled “*New Jersey Hospital-Based Violence Intervention Program at Jersey Shore Medical University.*” Project Director: Aakash Shah, New Jersey Office of the Attorney General. (\$2,500,000). Research involves data management, data science, and big data analytics.

WPU ASSIGNED RELEASE TIME FOR RESEARCH:

Spring 2027	<i>Evaluating Influencer Marketing Across Social Media Platforms Using Synthetic Text and LLMs, 3 Credits</i>
2019 – 2020	<i>Data Mining on YRBS (Youth Risk Behavior Survey) Data, 6 Credits</i>
2017 – 2019	<i>Computer Science Applications in Combinatorial Enumeration of Chemical Structures, 12 Credits</i>
2015 – 2017	<i>The Multi-Dimensional Unified Process, 12 Credits</i>
2013 – 2015	<i>The Multi-Dimensional Unified Process for Collaborative Software Development, 12 Credits</i>
2011 – 2013	<i>Collaborative Software Engineering Models, 12 Credits</i>
2010 – 2011	<i>The Complexity of DSP Benchmark Functions in a Multi-Core Environment, 6 Credits</i>
Spring 2010	The Continuation of the Writing of a Textbook titled “ <i>Software Engineering: Traditional and Object-Oriented Approaches,</i> ” 3 Credits
Spring 2009	Complete the Writing of a Textbook titled “ <i>Software Engineering: Traditional and Object-Oriented Approaches,</i> ” 3 Credits
Fall 2007	<i>Calibration of Benchmark Functions using Static and Dynamic Program Complexities, 3 Credits</i>
Fall 2006	<i>Development of Design Patterns for Relational Databases, 3 Credits</i>
Spring 2006	<i>Generic Software Engineering Design Patterns for Databases and Data Warehouses, 3 Credits</i>
Spring 2005	<i>Automatic Code Generation for Deductive Object-Oriented Systems, 3 Credits</i>
Fall 2003	<i>Software Engineering Issues in Data Warehousing Architecture, 3 Credits</i>
Spring 2003	<i>Query Capabilities and Evaluation in Multi-Dimensional Databases within the Context of an Enterprise Data Warehousing Architecture, Provost’s First Year Release Time Program Award: 3 Credits</i>

WPU FACULTY-STUDENT RESEARCH AWARDS:

2025-2026	<i>Using Synthetic Data and Large Language Models for Social Media Applications, Research Assistant: Justin McCarty. Research was supported by the College of Science and Health Student Research Fund: \$2,343.50 (Fall 2025), \$2,388.00 (Spring 2026)</i>
Summer 2025 – Spring 2026	<i>Artificial Intelligence Applications and Sustainability, Research Assistant: Michael Aviles (MaCS Scholar – Research Internship). Research was supported by the National Science Foundation under NSF Grant #2028011: \$1,600.00</i>
2024 – 2025	<i>High-Performance Computing Applications, Research Assistant: Ricky Bruno Steinel. Research was supported by the College of Science and Health Student Research Fund: \$1,815.60 (Fall 2024), \$1,858.80 (Spring 2025)</i>

Spring 2024	<i>The Applications of Data and Text Mining Algorithms using Supercomputer (Anvil at Purdue University)</i> , Research Assistants: Elisa Zuta and Justin Duke Itter. Research was supported by the College of Science and Health Student Research Fund: \$1,695.60
Fall 2023	<i>Sentiment Analysis Using Large Language Models</i> , Research Assistant: Elisa Zuta. Research was supported by the College of Science and Health Student Research Fund: \$1,695.60
Summer 2023	<i>Sentiment Analysis on Social Media Data</i> , Research Assistant: Elisa Zuta (MaCS Scholar – Summer Research Internship). Research was supported by the National Science Foundation under NSF Grant #2028011: \$1,350.00
Spring, 2023	<i>Text-Mining on Healthcare Data</i> , Research Assistant: Elisa Zuta. Research was supported by the College of Science and Health Student Research Fund: \$1,695.50
Fall 2022	<i>Data Mining Tools and Programs Performance</i> , Research Assistant: Sean Michael Gould. Research was supported by the College of Science and Health Student Research Fund: \$1,560.00
Spring, Summer 2022	<i>Social Media Data Analytics</i> , Research Assistants: Alan Gilberto Castaneda and Brandon William Cay. Research supported by the College of Science and Health Student Research Fund: \$1,560.00 (Spring 2022). Research was supported by the Department of Computer Science Departmental Fund: \$2,040.00 (Summer 2022)
Fall 2021	<i>Big Data Analytics on Social Media Data</i> , Research Assistant: Anna Renee Chieco (MaCS Scholar). Research was supported by the College of Science and Health Student Research Fund: \$1,440.00
Summer 2021	<i>Big Data Analytics on Social Media Data: A Social Media Data Acquisition Tool</i> , Research Assistant: Anna Renee Chieco (MaCS Scholar – Summer Research Internship). Research was supported by the National Science Foundation under NSF Grant #2028011: \$1,200.00
Fall 2019	<i>Data Mining on YRBS (Youth Risk Behavior Survey) Data</i> , Research Assistant: Anna G. Sand. College of Science and Health Student Research Fund: \$1,200.00
2018 – 2019	<i>A Knowledge Discovery Approach to Mental Health Problems in New York City</i> , Research Assistant: Sara Marianna Steinel. College of Science and Health Student Research Fund: \$1,032.00 (Spring 2018), \$1,032.00 (Fall 2018), \$1,062.00 (Spring 2019)
Fall 2017	<i>Data Mining on YRBS (Youth Risk Behavior Survey) Data</i> , Research Assistants: Caroline Ruiz Nunez and Sara Marianna Steinel. College of Science and Health Student Research Fund: \$1,012.80
2016 – 2017	<i>Data Analytics for YRBS (Youth Risk Behavior Survey) Data using Artificial Intelligence Techniques</i> , Research Assistant: Ana Katrina Ocampo. College of Science and Health Student Research Fund: \$1,005.60 (Fall 2016), \$1,012.80 (Spring 2017)
Fall 2016	<i>Computational Chemistry of Non-rigid Molecules</i> , Research Assistants: Joseph Candela and Tony Zheng. College of Science and Health Student Research Fund: \$1,005.60
2015 – 2016	<i>Data Extraction and Analytics for YRBS (Youth Risk Behavior Survey) Data</i> , Research Assistant: Ana Katrina Ocampo. College of Science and Health Student Research Fund: \$1,005.60 (Fall 2015), \$1,005.60 (Spring 2016)
2014 – 2015	<i>Multi-Dimensional Unified Process</i> , Research Assistant: Kenneth J. Fleischer. College of Science and Health Student Research Fund: \$768.00 (Fall 2014), \$896.00 (Spring 2015)
Spring 2014	<i>Finch Robot Programming</i> , Research Assistant: Jordan E. Matos. College of Science and Health Student Research Fund: \$500.00

Fall 2013	<i>Collaborative Software Engineering Research</i> , Research Assistant: Michael Moschovas. College of Science and Health Student Research Fund: \$768.00
2012 – 2013	<i>Performance Analyses of Digital Signal Processing Algorithms in a Multi-Core Environment</i> , Research Assistant: Beata Zaluska. College of Science and Health Student Research Fund: \$1,040.00 (Spring 2012), \$1,152.00 (Fall 2012), \$1,120.00 (Spring 2013); WPU Student Undergraduate Research Program: \$500.00
Spring, Summer, Fall 2011	<i>Performance Analyses of Digital Signal Processing Algorithms in a Multi-Core Environment</i> , Research Assistant: Brian Foulds. College of Science and Health Student Research Fund: \$2,080.00
Fall 2009	<i>Pre- and Post-Semester Course Analyses and the Enhancement of the Computer Science Department ABET Website</i> , Student Assistant: Steve Seok-Min Bang. College of Science and Health Student Worker Fund: \$960.00
Spring 2009	<i>Pre- and Post-Semester Course Surveys and Analyses</i> , Student Assistant: Steve Seok-Min Bang. College of Science and Health Student Worker Fund: \$1,200.00
Fall 2008	<i>Software Metrics for Digital Signal Processing Benchmark Programs</i> , Research Assistant: Ace Flores. College of Science and Health Student Research Fund: \$1,200.00
Summer 2008	<i>Digital Signal Processing Research</i> , Research Assistant: Bekim Abazoski. College of Science and Health Student Research Funds: \$1,200.00; WPU Student Undergraduate Research Program: \$500.00
Fall 2007	<i>Research and Development of the Computer Science Department Website</i> , Research Assistant: Brian Publik. College of Science and Health Student Worker Fund: \$1,200.00
Fall 2006	<i>Application of Gang-of-Four Design Patterns to Relational Databases</i> , Research Assistant: Philip K. Kang. College of Science and Health Student Research Fund: \$1,200.00
2005 – 2006	<i>Application of Generic Software Design Patterns to Database Development</i> , Research Assistant: Nathan M. Mantell. College of Science and Health Student Research Fund: \$1,200.00
Spring 2005	<i>Design Patterns Development in Software Engineering and Databases</i> , Research Assistant: Tatyana Budanskaya. College of Science and Health Student Research Fund: \$720.00

WPU SUMMER RESEARCH AWARDS:

Summer 2006	<i>Design Patterns for Relational Databases</i> , Research Assistant: Philip K. Kang. CfR (Center for Research) Award: \$4,960.00
Summer 2005	<i>Design Patterns Across Software Engineering and Databases</i> , Research Assistant: Nathan M. Mantell. CfR (Center for Research) Award: \$4,960.00
Summer 2004	<i>Modeling Deductive Object-Oriented Systems with UML</i> , Research Assistant: Gregory M. Brooks. CfR (Center for Research) Award: \$2,625.00
Summer 2003	<i>Total Query Optimization Strategies in On-Line Analytical Processing Systems</i> , Research Assistant: Yu H. Zhou. CfR (Center for Research) Award: \$4,480.00

SCHOLARLY ACTIVITY

KEYNOTE SPEAKERS / PANELISTS:

May 20, 2026	<i>Panel of Judges</i> for the student poster session. <i>NJBDA (New Jersey Big Data Alliance) 13th Annual Symposium</i> , Rowan University, Glassboro, New Jersey, USA.
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- March 4, 2026 **Panelist** at the *Academy of Criminal Justice Sciences (ACJS) 63rd Annual Meeting*, participating in the roundtable discussion titled “Emerging Strategies for Violence, Victimization, and Community Response: Insights from Neighborhood-Based Research, Part 2.” I discussed the application of Natural Language Processing to support systematic literature reviews. I demonstrated the use of data mining techniques—specifically, association rule analysis—to examine potential relationships between intimate partner violence and exposure to air pollution. Philadelphia, Pennsylvania, USA.
- November 17, 2025 **Keynote Speaker** for the *Pillars of Computer Science – Algorithms Workshop* (Dr. Katherine Herbert’s NSF Grant #GR01161, School of Computing, Montclair State University). Speech titled “Introduction to Computer Science: from Algorithms to Artificial Intelligence.” Bloomfield College of Montclair State University, Bloomfield, New Jersey, USA.
- November 7, 2025 **Panelist** for the *NJBDA (New Jersey Big Data Alliance) Research Collaboration Forum*, Research presentation (titled “AI ESG Firm Performance Framework”), and roundtable discussion. Rutgers University (Busch Campus), New Brunswick, New Jersey, USA.
- May 16, 2025 **Panel of Judges** for the student poster session, *NJBDA (New Jersey Big Data Alliance) 12th Annual Symposium*, Cotsakos College of Business, William Paterson University, Wayne, New Jersey, USA.
- September 14, 2023 **Plenary Keynote Address:** The Ethics of Artificial Intelligence in the Era of Generative AI. *The 27th World Multi-Conference on Systemics, Cybernetics and Informatics: WMSCI 2023*, IIS (International Institute of Informatics and Systemics), Virtual Conference. Address delivered by Joseph R. Laracy. Content contributed by Joseph R. Laracy, Thomas J. Marlowe, Cyril S. Ku, & Vassilka D. Kirova
- 2021, 2022 **NSF (National Science Foundation) Panelists**
- December 11, 2018 **Keynote Speaker and Panelist:** Big Data, Analytics, and Artificial Intelligence. *Data Science Symposium (Emerging Trends in Data Science)*, Cotsakos College of Business, William Paterson University, Wayne, New Jersey, USA.
- 2015 – 2023 **ASEE Panelist for SMART Scholarship Program:** Evaluation Panelist for ASEE’s (American Society for Engineering Education) Science, Mathematics, and Research for Transformation (SMART) Program (Part of the National Defense Education Program), Washington, DC, USA
- 2007 – 2010 **Panel Member of the External Expert Committee** in the Computer Science Panel for the Research Foundation of CUNY (City University of New York), New York, USA.

JOURNAL EDITORIAL BOARDS:

- 2023 – 2024 **Associate Editor**, *Cybernetics and Systems*, an international journal of the Taylor & Francis Group, London, England, UK.
- 2017 **Editorial Advisory Board** for “*Philosophical Perceptions on Logic and Order*” by Jeremy Horne, IGI Global (International Publisher of Information Science and Technology Research), ISBN13: 9781522524434, ISBN10: 1522524436
- 1994 – 1997 **Journal Reviewer**, *The Journal of Systems Integration*, Kluwer Academic Publishers, Hingham, Massachusetts, USA.

INTERDISCIPLINARY APPOINTMENTS:

- 2026 – Present Joint collaborative interdisciplinary research with the MBA program concentration in Environmental, Social, and Governance (ESG). Cotsakos College of Business, William Paterson University

- 2024 – 2025 Affiliated Faculty at the Center for Socially Responsible Entrepreneurship and Innovation (CSREI) in the Cotsakos College of Business at William Paterson University
- 2018 – 2023 Joint appointment with the Master's Program in Applied Business Analytics in the Department of Marketing and Management Sciences, Cotsakos College of Business, William Paterson University
- 2012 – 2026 Joint appointment with the Linguistics Minor program in the Department of Languages & Cultures, College of Humanities and Social Sciences, William Paterson University

COMPUTER SCIENCE ADVISORY BOARDS:

- 2013 – 2020 Advisory Board for the Computer Science program in the Department of Mathematics and Computer Science, Seton Hall University
- 2008 – 2013, Advisory Board for the Computer Science program of the ITT/Cisco Academy at Bergen County
2016 – 2017 Technical High School's Teterboro campus

MEDIA APPEARANCE:

- July 22, 2012 “*The IT Experts Have It: Computer Science Grads are in Demand,*” interviewed by Guy Kipp, Fall Education section, *The Star-Ledger* (New Jersey Newspaper)

CONFERENCE PROGRAM COMMITTEES:

- May 20, 2026 ***Research Session (AI and Informatics) Moderator: The 13th NJBDA (New Jersey Big Data Alliance) Annual Symposium, Rowan University, Glassboro, New Jersey, USA***
- Jun 25-27, *The 29th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, 2025 Networking and Parallel/Distributed Computing (SNPD2025-SummerI), Busan, South Korea*
- Jul 16-18, *The 9th IEEE/ACIS International Conference on Big Data, Cloud Computing, and Data Science 2024 Engineering (BCD 2024-Summer), Kitakyushu, Japan*
- Dec 14-16, *The 8th IEEE/ACIS International Conference on Big Data, Cloud Computing, and Data Science 2023 Engineering (BCD 2023), Ho Chi Minh City, Vietnam*
- Jul 14-16, *The 3rd ACIS International Conference of Artificial Intelligence (IAI-2023), London, UK 2023*
- Jul 5-7, *The 25th IEEE/ACIS International Summer Conference on Software Engineering, Artificial Intelligence, 2023 Networking and Parallel/Distributed Computing (SNPD2023-Summer), Taiyuan, China*
- Aug 4-6, *The 7th IEEE/ACIS International Conference on Big Data, Cloud Computing, and Data Science 2022 Engineering (BCD 2022), Danang, Vietnam*
- Oct 13-15, *IEEE/ACIS 21st International Fall Conference on Computer and Information Science (ICIS 2021-Fall), 2021 Xi'an, China*
- Sep 13-15, *The 6th IEEE/ACIS International Semi-Virtual Conference on Big Data, Cloud Computing, and Data 2021 Science Engineering (BCD 2021), Zhuhai, China*
- Jun 23-25, *IEEE/ACIS 20th International Summer Semi-Virtual Conference on Computer and Information Science 2021 (ICIS 2021-Summer), Shanghai, China*
- May 29-31, *The 17th IEEE/ACIS International Conference on Software Engineering Research, Management and 2019 Applications (SERA 2019), Honolulu, Hawaii, USA*

Jun 13-15, 2018	<i>The 16th IEEE/ACIS International Conference on Software Engineering Research, Management and Applications (SERA 2018)</i> , Kunming, China
Jun 7-9, 2017	<i>The 15th IEEE/ACIS International Conference on Software Engineering Research, Management and Applications (SERA 2017)</i> , University of Greenwich, London, United Kingdom
Jun 8-10, 2016	<i>The 14th IEEE/ACIS International Conference on Software Engineering Research, Management and Applications (SERA 2016)</i> , Towson, Maryland, USA
Mar 25-27, 2015	<i>The 29th IEEE International Conference on Advanced Information Networking and Applications (AINA-2015)</i> , Gwangju, Korea
Aug 4-6, 2014	<i>International C* Conference on Computer Science & Software Engineering (C³S²E'14)</i> , Concordia University, Montreal, Canada
Jun 4-6, 2014	<i>The 13th IEEE/ACIS International Conference on Computer and Information Science (ICIS 2014)</i> , Taiyuan, China
Jul 10-12, 2013	<i>International C* Conference on Computer Science & Software Engineering (C³S²E'13)</i> , Porto, Portugal
Jun 16-20, 2013	<i>The 12th IEEE/ACIS International Conference on Computer and Information Science (ICIS 2013)</i> , Toki Messe, Niigata, Japan
July 17-20, 2012	Session Co-Chair and Program Committee: <i>The 2nd International Symposium on Collaborative Enterprises (CENT 2012)</i> , Orlando, Florida, USA.
Jun 27-29, 2012	<i>International C* Conference on Computer Science & Software Engineering (C³S²E'12)</i> , Montreal, QC, Canada
May 30-Jun 1, 2012	<i>The 11th IEEE/ACIS International Conference on Computer and Information Science (ICIS 2012)</i> , Shanghai, China
Oct 23-28, 2011	<i>The Sixth International Conference on Software Engineering Advances (ICSEA 2011)</i> , Barcelona, Spain
Aug 10-12, 2011	<i>The 9th ACIS International Conference on Software Engineering Research, Management and Applications (SERA2011)</i> , Baltimore, Maryland, USA
May 16-18, 2011	<i>The Fourth International C* Conference on Computer Science & Software Engineering (C³S²E'11)</i> , Montreal, QC, Canada
May 24-26, 2010	<i>The 8th IEEE/ACIS International Conference on Software Engineering Research, Management and Applications (SERA2010)</i> , Montreal, Canada
Dec 2-4, 2009	<i>The 7th ACIS International Conference on Software Engineering Research, Management and Applications (SERA2009)</i> , Haikou, Hainan Island, China
Jun 22-24, 2009	<i>ISCA 18th International Conference on Software Engineering and Data Engineering (SEDE-2009)</i> , Las Vegas, Nevada, USA
Jun 30- Jul 2, 2008	<i>The 17th International Conference on Software Engineering and Data Engineering (SEDE-2008)</i> , Los Angeles, California, USA

Jul 9-11, 2007	<i>The 16th International Conference on Software Engineering and Data Engineering (SEDE-2007)</i> , Las Vegas, Nevada, USA
Jun 25-28, 2007	<i>The 2007 International Conference on Software Engineering Research and Practice (SERP'07)</i> , Las Vegas, Nevada, USA
Jun 26-29, 2006	<i>The 2006 International Conference on Software Engineering Research and Practice (SERP'06)</i> , Las Vegas, Nevada, USA
May 20-28, 2006	<i>The Third International Workshop on Software Development Methodologies of Distributed Systems (SDM-DS 2006)</i> , Shanghai, China
Jun 27-30, 2005	<i>The 2005 International Conference on Software Engineering Research and Practice (SERP'05)</i> , Las Vegas, Nevada, USA
Jun 22-23, 2005	<i>The Second International Workshop on Software Development Methodologies of Distributed Systems (SDM-DS 2005)</i> , Wuxi, China
Jun 21-24, 2004	<i>The 2004 International Conference on Software Engineering Research and Practice (SERP'04)</i> , Las Vegas, Nevada, USA
Apr 16-18, 2001	<i>International Workshop on Mining Spatial and Temporal Data, The Fifth Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD-01)</i> , Kowloon, Hong Kong
March 17-19, 1994	Session Chair: <i>The ISCA (International Society for Computers and their Applications) International Conference on Computers and their Applications – Databases Session</i> , Long Beach, California, USA.
Mar 10-12, 1993	<i>The ISMM (International Society for Mini and Microcomputers) International Conference on Computer Applications in Design, Simulation, and Analysis</i> , George Washington University, Washington, D. C., USA

WPU DOCTORAL DISSERTATION SUPERVISION:

Spring – Fall 2025	Dissertation Committee Member for Samantha A. Love, <i>Parental Perspective on Traditional versus Automated Insulin Delivery Systems for Pediatric Type 1 Diabetes Management</i> , Doctor of Nursing Practice, School of Nursing, William Paterson University. Dissertation Committee: Cheryl Hollema, Cyril S. Ku, and Paul Pelavin (Valley Health System).
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WPU HONORS COLLEGE THESIS SUPERVISIONS:

2018 – 2019	Sara Marianna Steinel, <i>Comparing Data Analysis Approaches: Hypothesis Driven and Knowledge Discovery</i> , Co-advisors: David M. Freestone, Cyril S. Ku, and Amy Learmonth, Department of Psychology (Cognitive Science Honors Track), William Paterson University. Thesis date: May 2019
2013 – 2014	Daniel J. Molczyk, <i>ELPH: Prototype Therapy Chatbot for Subclinical Stress in College Students</i> , Co-advisors: Cyril S. Ku and Amy Learmonth, Department of Psychology (Cognitive Science Honors Track), William Paterson University. Thesis date: May 2014
2012 – 2013	John G. Fromholtz, <i>Distributed Server System Modeled on Formicidae Behaviors and Structured Peer-to-Peer Network Architecture</i> , Co-advisors: Cyril S. Ku and Amy Learmonth, Department of Psychology (Cognitive Science Honors Track), William Paterson University. Thesis date: May 2013
2012 – 2013	William Andrew Landon, <i>Discrete Trial Teaching Program for Autism Students</i> , Co-advisors: Cyril S. Ku, Amy Learmonth, Department of Psychology (Cognitive Science Honors Track), William Paterson University. Thesis date: May 2013

MASTER THESIS/PROJECT SUPERVISIONS:

- 1999 – 2000 Diana H. O’Connell, *The Design and Implementation of Element Management Systems*, Department of Computer and Information Science, New Jersey Institute of Technology. Thesis date: March 2000
- 1998 Ameettha Sankaranarayanan, *Win/Loss Data Mart: Outbound Service Migration*, Department of Computer and Information Science, New Jersey Institute of Technology. Thesis date: December 1998
- 1996 – 1997 Corinne Gilfillan, *A Methodology to Transform an Extended Entity-Relationship Model into an Object-Oriented Entity-Relationship Model*, Department of Computer and Information Science, New Jersey Institute of Technology. Thesis date: June 1997
- 1995 – 1996 Shiowying Gea, *Concurrency Control in a Distributed Environment*, Department of Computer and Information Science, New Jersey Institute of Technology. Thesis date: June 1996
- 1988 – 1989 Hee-Woon Yum, *An Incremental Compiler for an Indefinite Deductive Database*, Department of Electrical Engineering and Computer Science, Northwestern University. Thesis date: May 1, 1989

INDEPENDENT STUDY (CS 4990) SUPERVISIONS:

- Spring 2019 Sara Marianna Steinel, *A Knowledge Discovery Approach to Mental Health Problems in New York City*, 3 Credits, Department of Computer Science, William Paterson University
- Spring 2017 Ana Katrina Ocampo, *Big Data Analytics using Artificial Intelligence and Data Mining Methodologies*, 3 Credits, Department of Computer Science, William Paterson University

INTERNSHIP (CS 4950) SUPERVISIONS:

- Summer 2018 Sara Marianna Steinel, *Data Link Communications between Military Platforms*, BAE Systems, 150 Parish Drive, Wayne, New Jersey 07474. Credit entered: Fall 2018
- Spring 2014 Christine M. Potenza, *Enterprise Information Systems Student Position*, Information Technology, William Paterson University

NEW COURSE DEVELOPMENTS:

- Spring 2026 CS 6030 (Natural Language Processing) - Developed comprehensive course materials for this new graduate-level course that I introduced in the Spring 2026 semester.
- 2024 – 2025 CS 1101 (Introduction to AI: Applications, Tools, and Social Impact) – University Core Curriculum Course (UCC 2.0)
- 2023 – 2024 CS 5070 (Advanced Data Science and Analytics – M.S. in CS)
CS 6070 (Advanced Data Mining and Machine Learning – M.S. in CS)
- 2022 – 2023 CS 4075 (Data Mining and Data Analytics – William Paterson Online Degree Program)
- 2018 – 2019 CS 4070 (Data Science and Analytics)
CS 4080 (Data Mining and Machine Learning)
- 2014 – 2015 CS 3990 (Selected Topics: Data Warehousing and Data Mining)
- Summer 2014 Virtual World: Web Design and Development (Summer Short Course)

SCHOLARLY ACTIVITY AWARDS:

2026	Faculty Travel Funding 2025-2026 Round III, WPU. Awarded \$757.80 to cover expenses for panel discussion at the <i>Academy of Criminal Justice Sciences (ACJS) 63rd Annual Meeting</i> in Philadelphia, Pennsylvania, USA.
2025	Faculty Travel Funding 2025-2026 Round II, WPU. Awarded \$2,056.50 to cover expenses for research presentation at the <i>NCA (National Communication Association) 111th Annual Convention</i> in Denver, Colorado, USA.
2024	Faculty Travel Funding 2024-2025 Round I, WPU. Awarded \$550.00 for registration fee reimbursement for the <i>9th IEEE/ACIS International Conference on Big Data, Cloud Computing, and Data Science (BCD 2024-Summer)</i> , Kitakyushu, Japan.
2024	Career Development Funds, Office of the Provost, WPU. Awarded \$874.00 to cover expenses for research presentation at the <i>61st ACJS (Academy of Criminal Justice Sciences) Annual Meeting</i> in Chicago, Illinois, USA.
2021 – 2022	Career Development Funds, Office of the Provost, WPU. Awarded \$470.00 for registration fee reimbursement for the <i>6th IEEE/ACIS International Semi-Virtual Conference on Big Data, Cloud Computing, and Data Science Engineering (BCD 2021)</i> , Zhuhai, China.
Jun 2005	Career Development Funds, Office of the Provost, WPU: \$137.00
Jun 2004	Career Development Funds, Office of the Provost, WPU: \$385.00

OTHER SCHOLARLY ACTIVITIES:

Feb 2023	External Reviewer for Dr. Ziyuan Meng's tenure decision regarding scholarship in the Mathematics & Computer Science Department at Drew University, Madison, New Jersey.
Jul 2019	External Reviewer for Dr. Joseph L. Fera's promotion to Associate Professor with tenure in the Department of Mathematics at Lehman College, City University of New York.
April 21, 2017	External Program Evaluator for the Software Technology Program in the School of Engineering Technology at SUNY (State University of New York) Farmingdale State College
Jan 2017	External Reviewer for Full Professor promotion for Dr. Qinghai Gao in the Department of Security Systems & Law Enforcement Technology, School of Engineering Technologies, Farmingdale State College, State University of New York.
2012-2013	Sabbatical Host – Hosted Dr. Thomas J. Marlowe (Department of Mathematics and Computer Science, Seton Hall University) at WPU on his sabbatical leave from Seton Hall University.

UNIVERSITY / COLLEGE / DEPARTMENTAL SERVICE
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WPU UNIVERSITY SERVICES:

2025-2026	University Promotion Committee – Reviewed promotion applications for the full professor position. Evaluated faculty accomplishments in teaching, scholarship, and service to support fair and rigorous promotion decisions.
Sept 30, 2021	Faculty Reviewer for the Marketing and Public Relations Department – Reviewed and provided faculty feedback on the proposed new advertising themes for the WPU brand.

2017 – 2018	<i>Presidential Search Committee</i> – Participated in the national search process for the Eighth President of William Paterson University by evaluating candidates and contributing to the selection process and campus visit activities.
2017 – 2019	<i>Research & Scholarship Council (Faculty Senate)</i> – Contributed to university initiatives promoting faculty research, scholarship, and creative activities, including reviewing research-related policies and programs.
2014 – 2016	<i>Technology Council (Faculty Senate)</i> – Worked with faculty and administrators to evaluate and recommend technology initiatives that supported the University's academic and administrative missions.
Summer 2014	<i>Search Committee for Professional Academic Advisor</i> – Participated in recruiting, evaluating, and selecting a Professional Academic Advisor for the Gloria S. Williams Advisement Center.
2012 – 2013	<i>Strategic Plan Committee for David and Lorraine Cheng Library</i> – Helped develop the strategic vision and long-term planning initiatives for the University library to support teaching, learning, and research.
2011 – 2012	<i>Search Committee for Chief Information Officer</i> – Assisted in the search and evaluation of candidates for the University's CIO position, helping identify leadership for institutional technology initiatives.
Jun-Jul 2011	<i>Search Committee for Academic Advisor/Career Counselor</i> – Evaluated applicants and participated in the hiring process for an Academic Advisor/Career Counselor serving the Career Development and Gloria S. Williams Advisement Center.
Spring-Fall 2010	<i>Search Committee for Associate Director, Office of Institutional Research and Assessment</i> – Served on the search committee responsible for identifying and selecting candidates for a leadership position.
May 2010	<i>Selection Committee for Faculty Excellence Awards</i> – Reviewed faculty nominations and evaluated achievements in research, scholarship, teaching, and service for the University's Faculty Excellence Awards.
Spring 2010	<i>GS-LSAMP Campus Advisory Committee</i> – Supported initiatives to increase the participation and success of underrepresented students in STEM disciplines through the Garden State Louis Stokes Alliance for Minority Participation.
2009-2011, 2013-2015	<i>Faculty Senate Senator</i> – Represented faculty interests in shared governance and participated in the development of university policies, academic initiatives, and strategic planning.
2008 – 2018	<i>Career Development and Gloria S. Williams Advisement Center Advisory Board</i> – Provided guidance on advising, career development programs, and student success initiatives to strengthen student services across the University.
2007 – 2008	<i>Academic Plan Committee (Provost Office)</i> – Contributed to the development of the University's academic planning process by evaluating priorities and recommending future academic initiatives.
July 2007	<i>Committee to explore a Master of Library Science Program</i> – Evaluated the feasibility and potential academic impact of establishing a Master of Library Science program at William Paterson University.
Spring 2007	<i>Search Committee for Proposal Development Specialist (Office of Sponsored Programs)</i> – Participated in the hiring process for a Proposal Development Specialist to strengthen the University's external funding and grant development efforts.
2005 – Present	<i>Information Technology Advisory Committee</i> – Contribute to the University's long-term information technology planning by helping develop the University's IT Strategic Plan every two years.

WPU COLLEGE OF SCIENCE AND HEALTH SERVICES:

- 2020 – Present ***Web Liaison*** – Coordinate with the University's web services to maintain and improve the College's departmental websites, ensuring accurate, accessible, and up-to-date online information.
- 2019 – 2021 ***CfR (Center for Research) Advisory Committee*** – Provided recommendations and evaluations on research initiatives, faculty support programs, and policies that strengthened scholarly activities across the College.
- Spring 2016 ***Faculty Range Adjustment Committee*** – Evaluated and reviewed faculty members' applications for range adjustment based on teaching, scholarship, and service accomplishments.
- 2015 – 2017 ***Faculty Mentor for New Faculty*** – Mentored newly hired faculty by guiding teaching, research, service, and professional development to facilitate their successful transition into the University. (2015 – 2016: Dr. Aleksandar Kecojevic – Department of Public Health, 2016 – 2017: Dr. David Hack – Department of Kinesiology)
- 2014 – 2015 ***Search Committee for Tenure-Track Faculty Position, Department of Public Health*** – Participated in recruiting, interviewing, and evaluating candidates for a tenure-track faculty position in the Department of Public Health.
- March 15, 2012 ***Organizing Committee for the Alumni Association's Distinguished Professorship Lecture Series: New Frontiers of Nanotechnology: Changing the Future of Everything*** – Assisted in organizing a campus-wide distinguished lecture that promoted interdisciplinary scholarship and alumni engagement.
- 2005 – 2008 ***Committee for the New Science Hall Building*** – Contributed faculty input on the planning and development of the new Science Hall to support modern teaching, research, and laboratory facilities.
- 2003 – 2004 ***Technology Committee*** – Provided recommendations on technology planning and instructional computing resources within the College.

WPU COMPUTER SCIENCE DEPARTMENT SERVICES:

- Summer 2026 – Spring 2027 ***Interim Department Chair*** – Provide academic and administrative leadership for the Department, overseeing faculty, curriculum, scheduling, budgeting, accreditation activities, and strategic planning.
- 2024 – 2027 ***Coordinator, Computer Science Department Colloquium*** – Organize departmental colloquia by inviting speakers from academia and industry to enhance research collaboration and student engagement.
- 2023 – 2026 ***Retention and Promotion Committee*** – Reviewed faculty applications for retention and promotion and evaluated research, teaching, scholarship, and service according to departmental and university standards.
- 2020 – 2021 ***UPE Induction Organization Committee*** – Coordinated the induction ceremony and activities for new members of Upsilon Pi Epsilon, the international honor society for computing disciplines.
- 2017 – Present ***Founder and Director, Data Science Research Lab*** – Established and direct the Department's Data Science Research Lab (DSRL), providing undergraduate and graduate students with research opportunities in artificial intelligence, machine learning, natural language processing, and data science. DSRL: <https://www.wpunj.edu/cosh/departments/computer-science/Research/Data-Science-Research-Lab/>
- 2015 – 2026 ***Department Council*** – Participated in departmental governance by contributing to policy development, strategic planning, and academic decision-making.
- 2014 – 2024 ***Coordinator, UPS Computer Information Technology Lecture Series*** (the Lecture Series was made possible by a generous grant from the UPS Foundation of UPS) – Organized an industry-sponsored lecture series that brought distinguished professionals to campus to expose students to emerging technologies and career opportunities.

- 2013 – 2026 **Teaching Scheduling Committee** – Developed teaching schedules and course assignments to ensure efficient course offerings and effective utilization of faculty resources.
- 2009 – 2017, 2018 – 2026 **Department Assessment Committee (DAC)** – Participated in the assessment of tenured faculty. Evaluated their achievements in research, scholarship, teaching, and service for the Department, College, and University.
- 2009 – Present **Coordinator, Computer Science Advisory Board** – Coordinate an advisory board composed of academic and industry leaders to strengthen curriculum development, industry partnerships, workforce readiness, and ABET accreditation efforts.
- 2008 – 2013 **Computer Science Advisory Board** – Served as an Ex-Officio member supporting advisory board activities and fostering collaboration between the Department and industry partners.
- 2007 – Present **Department Webmaster** – Maintain and continuously improve the Department's website to provide accurate information for students, faculty, alumni, and external stakeholders.
- 2007 – 2013 **Department Chairperson** – Provided strategic and administrative leadership that resulted in significant departmental growth, including launching new academic programs (minor in Computer Information Systems, B. S. major in Computer Information Technology), obtaining the Department's first ABET accreditation (accredited in Summer 2008, retroactively on 10/1/2006), increasing enrollment by over 80%, expanding interdisciplinary collaborations, strengthening industry partnerships, and creating new internship and employment opportunities for students.
- 2007 – 2010 **ABET Accreditation Ad Hoc Committee** – Helped prepare accreditation materials, coordinate assessment activities, and support the achievement of ABET accreditation.
- 2006 – 2008, 2016 – 2020 **Assessment Committee** – Participated in program assessment and continuous improvement efforts to evaluate student learning outcomes, improve academic quality, and maintain ABET accreditation.
- 2004 – 2007, 2013 – 2017 **Technology across the Curriculum (TAC) Committee (Chair: 2006 – 2007)** – Promoted the effective integration of instructional technology into the curriculum across campus.
- 2004 – 2005, 2013 – 2026 **Faculty Recruitment Committee (Chair: 2023 – 2024, 2024 – 2025)** – Participated in recruiting outstanding faculty members through candidate evaluation, interviews, and hiring recommendations.
- 2003 – Present **Curriculum Committee (Ex-Officio: 2007 – 2013)** – Contribute to curriculum development, course revisions, and program improvements to ensure academic quality and alignment with evolving disciplinary needs.
- 2003 – Present **Election Committee** – Coordinate departmental elections and ensure transparent and effective faculty governance procedures.
- 2003 – Present **Academic Advisor and Mentor** – Advise and mentor undergraduate and graduate students on academic planning, career development, internships, research opportunities, and graduate school preparation.
- 2002 – 2003 **Program Review Committee** – Participated in the comprehensive review of the Department's academic programs, identifying strengths and recommending improvements to enhance program quality and effectiveness.

PEER-REVIEWED (REFEREED) JOURNALS:

1. Ku, C. S., Weiner, D., Wells, M., Huang, A., & Peltier, M. R. (2026, May 9). Automating Systematic Reviews in Clinical Psychiatry: Comparing Domain Experts and NLP-Based Text Mining. *Information*, 17(5), 463. MDPI Journal. (This article belongs to the Special Issue Natural Language Processing (NLP) with Applications and Natural Language Understanding (NLU), 2nd Edition). <https://doi.org/10.3390/info17050463>
2. Marlowe, T. J., Ku, C. S., Laracy, J. R., Kirova, V. D., & Herbert, K. G. (2026, January 8). A Systemic View of a Software Engineering Education Curriculum: Requirements and Guidelines in the Era of Generative AI. *Journal of Integrated Design and Process Science*. Sage Journals. <https://doi.org/10.1177/10920617251405471>
3. Ku, C. S., Pugliese, K., Dmello, J. R., Peltier, M. R., Green, R., & Ranjan, S. (2025, December 11). Validating the Use of Natural Language Processing and Text Mining for Hospital-Based Violence Intervention Programs and Criminal Justice Articles. *Information*, 16(12), 1098. MDPI Journal. (This article belongs to the Special Issue Natural Language Processing (NLP) with Applications and Natural Language Understanding (NLU), 2nd Edition). <https://doi.org/10.3390/info16121098>
4. Laracy, J. R., Meng, Z., Kirova, V. D., Ku, C. S., & Marlowe, T. J. (2025, November 13). Software Quality Assurance and AI: A Systems-Theoretic Approach to Reliability, Safety, and Security. *Software*. 4(4), 30. MDPI Journal. <https://doi.org/10.3390/software4040030>
5. Wongchanapai, P., Green, R., Ku, C. S., Peltier, M. R., & Ranjan, S. (2025, November). Air Pollution and Intimate Partner Violence in New Jersey: Examining the Evidence. *Psychology of Violence*. 15(6), 682-688. American Psychological Association (APA PsycNet). <https://doi.org/10.1037/vio0000653>
6. Marlowe, T. J., Herbert-Berger, K. G., & Ku, C. S. (2025, September 16). The Interaction of Ecology and Computing and Its Ethical Consequences. *Theology and Science*. 23(4), 909-931. Taylor & Francis. <https://doi.org/10.1080/14746700.2025.2550550>
7. Kirova, V. D., Ku, C. S., Laracy, J. R., & Marlowe, T. J. (2023). The Ethics of Artificial Intelligence in the Era of Generative AI. *Journal of Systemics, Cybernetics and Informatics*, 21(4), 42-50. <https://doi.org/10.54808/JSCI.21.04.42>
8. Basch, C. H., Hillyer, G. C., Kecojevic, A., Ku, C. S., & Basch, C. E. (2019, May 29). Indoor Tanning and Poor Mental Health among Adolescents in New York City (2015). *Journal of Health Psychology*. <https://doi.org/10.1177/1359105319852668>
9. Kirova, V. D., Marlowe, T. J., & Ku, C. S. (2015, December). Monitoring and Reducing Application Fragility through Traceability and Effective Regression Testing. *Genie Logiciel*, (115), 2-9.
10. Kirova, V. D., Marlowe, T. J., & Ku, C. S. (2013, December). Knowledge Engineering and Colored Traceability in Global Collaborative Software Enterprises. *Genie Logiciel*, (107), 39-46.
11. Jastroch, N., Ku, C. S., Marlowe, T. J., Kirova, V. D., Mohtashami, M., & Nousala, S. (2011). Inter-organizational Collaboration: Product, Knowledge and Risk. *Journal of Systemics, Cybernetics and Informatics*, 9(5), 30-35. <https://ssrn.com/abstract=1995000>
12. Mohtashami, M., Marlowe, T. J., & Ku, C. S. (2011). Metrics are Needed for Collaborative Software Development. *Journal of Systemics, Cybernetics, and Informatics*, 9(5), 41-47.
13. Hu, E. W., Ku, C. S., Russo, A. T., Su, B., & Wang, J. (2009). Performance Analysis of Digital Signal Processors using SMV Benchmark. *International Journal of Signal Processing*, 5(3), 223-230. The same paper also appeared in the *International Journal of Electrical, Electronic and Communication Sciences*, 3(11), 1954-1961. Science Press, ISSN: 2517-9438. *World Academy of Science, Engineering and Technology International Journal of Electrical,*

Computer, Energetic, Electronic and Communication Engineering, 3(11). *International Scholarly and Scientific Research & Innovation*, 3(11), 2068-2075.

14. Yoon, S. C. & Ku, C. S. (1998). Towards a Deductive Object-oriented System. *International journal of computers & applications*, Acta Press, 20(2), 68-73.
15. Yoon, S. C., Ku, C. S., & Henschen, L. J. (1996, December 1). Semantic Query Reformulation in Object-oriented Databases. *Microcomputer Applications*, 15(3), 106-112.
16. Ku, C. S., Kim, H. D., & Henschen, L. J. (1994, October). An Efficient Indefiniteness Inference Scheme in Indefinite Deductive Databases. *IEEE Transactions on Knowledge and Data Engineering*, 6(5), 713-722.
<https://doi.org/10.1109/69.317702>

BOOK CHAPTERS:

1. Choi, J. A. & Ku, C. S. (2022, January). Identifying the Public's Changing Concerns during a Global Health Crisis: Text Mining and Comparative Analysis of Tweets during the COVID-19 Pandemic. In: Lee, R. (eds) *Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing*. SNPD 2021, Studies in Computational Intelligence, vol 1012, Springer, Cham, Switzerland. https://doi.org/10.1007/978-3-030-92317-4_11
2. Ku, C. S. (2009). Design Patterns. *Wiley Encyclopedia of Computer Science and Engineering*. Wah, B. W. (Editor), John Wiley & Sons, Inc., Volume 2, (pp. 928-935). ISBN 978-0-471-38393-2.
3. Lindquist, T. E., Ku, C. S., & Robinson, R. M. (1986). Integrated Tools for Program Construction. *Human-Computer Dialogue Design*. Ehrich, R. W., & Williges, R. C. (Editors), Elsevier Science Publishers B. V., Amsterdam, The Netherlands, Chapter 6, (pp. 215-239). ISBN 0-444-42567-5.

PEER-REVIEWED (REFEREED) CONFERENCE PAPERS:

1. Choi, J. A. & Ku, C. S. (2026, July 2). Conceptualization of the LLM Framework for Examining Engagement with Content Creators for Advertising Outcomes, *Proceedings of the Third International Conference on Convergent and Smart Systems*, Pioneer International University, Nairobi, Kenya.
2. Neupane, B., Ku, C. S., & Lim, K. (2026, May 9). A Modular and Model-Agnostic LLM Framework for PHP Webshell Detection, *Proceedings of the 12th IEEE International Conference on Intelligent Data and Security (IEEE BigDataSecurity 2026)*, **Best Paper Award**, New York City, New York, USA.
<https://doi.org/10.1109/IDS69480.2026.00010>
3. Neupane, B., Ku, C. S., & Lim, K. (2025, June 25). Machine Learning-based Detection of PHP Web Shells: A Comparative Analysis of Regex and LLM-based Methods, *Proceedings of the Second International Conference on Convergent and Smart Systems*, (pp. 36-43), Pioneer International University, Nairobi, Kenya.
4. Steinel, R. B., Lim, K., & Ku, C. S. (2025, June 25). Synthetic Data Generation for Cybersecurity Applications: An Exploratory Study of GAN Models, *Proceedings of the Second International Conference on Convergent and Smart Systems*, (pp. 122-127), Pioneer International University, Nairobi, Kenya.
5. Laracy, J. R., Kirova, V. D., Ku, C. S., & Marlowe, T. J. (2025, June 7). Human Dignity and the Ethics of Artificial Intelligence: A Framework for Responsible Design and Use from the Perspective of Catholic Social Teaching. *Proceedings of 2025 IEEE International Symposium on Ethics in Engineering, Science, and Technology (ETHICS)*, Northwestern University, Evanston, Illinois, USA. <https://doi.org/10.1109/ETHICS65148.2025.11098185>
6. Choi, J. A. & Ku, C. S. (2024, July 17). Examining Platform Strategy for Influencer Marketing Using Text Mining. *The 9th IEEE/ACIS International Conference on Big Data, Cloud Computing, and Data Science (BCD 2024-Summer)*, Kitakyushu, Japan. <https://doi.org/10.1109/BCD61269.2024.10743091>

7. Kirova, V. D., Ku, C. S., Laracy, J. R., & Marlowe, T. J. (2024, March 7). Software Engineering Education Must Adapt and Evolve for an LLM (Large Language Model) Environment. *Proceedings of the 55th ACM Technical Symposium on Computer Science Education (SIGCSE 2024)*, Vol. 1, (pp. 666-672). Portland, Oregon, USA. <https://doi.org/10.1145/3626252.3630927>
8. Ku, C. S., Marlowe, T. J., Laracy, J. R., & Choi, J. A. (2022, July 12-15). A Cybernetics Perspective on Data Science: Macro and Micro Views. *Proceedings of the 26th World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI 2022)*, (pp. 47-52), Orlando, Florida, USA. ISBN: 978-1-950492-64-0. <https://doi.org/10.54808/WMSCI2022.01.47>
9. Herbert, K. G., Marlowe, T. J., Fails, J. A., Ku, C. S., Goedert, K. M., Hill, E., Goodey, N. M., & MacVeigh, D. T. (2017, June 25-28). The NECST Program – Networking and Engaging in Computer Science and Information Technology Program. *The 124th ASEE (American Society for Engineering Education) Annual Conference & Exposition*, Columbus, Ohio, USA.
10. Moghani, A., Najarian, J. P., Ku, C. S., Namazi, J., Xing, Y., & Foley, J. (2016, August 30-31). Combinatorial Computation Study on Non-rigid Molecule 2, 3, 6, 7, 10, 11-hexanitrotriphenylene. *The 19th Japan-Korea Joint Workshop on Algorithms and Computation (WAAC 2016)*, Hakodate, Japan.
11. Marlowe, T. J., Kirova, V. D., Ku, C. S., & Mohtashami, M. (2013, November 16-19). A Strategy for Improving Curricular Coverage of Problem-Solving Through Emphasis on Requirements Analysis. *The DSI (Decision Sciences Institute) 2013 Proceedings of the 44th DSI Annual Meeting*, Baltimore, Maryland, USA.
12. Kirova, V. D., Marlowe, T. J., & Ku, C. S. (2013, November 4-6). Knowledge Management in Global Collaborative Software Enterprises: Knowledge Management and Colored Traceability. *25th International Conference on Software & Systems Engineering and their Applications*, Telecom ParisTech, Paris, France.
13. Jastroch, N., Ku, C. S., Marlowe, T. J., & Kirova, V. D. (2013, September 25-27). Integrated Infrastructures for Knowledge-Guided Software Evolution and Adaptation. *The 22nd ISCA International Conference on Software Engineering and Data Engineering (SEDE 2013)*, (pp. 105-110). Los Angeles, California, USA. <https://ssrn.com/abstract=2358590>
14. Marlowe, T. J., Benham, J. W., Kirova, V. D., Ku, C. S., Nousala, S., & Jastroch, N. (2013, July 9-12). Introducing Requirements Acquisition and Analysis Through a Very Incompletely Specified Problem. *The 11th International Conference on Education and Information Systems, Technologies and Applications: EISTA 2013 (in the context of the 7th International Multi-Conference on Society, Cybernetics and Informatics: IMSCI 2013)*, (pp. 270-275), Orlando, Florida, USA.
15. Marlowe, T. J., Kirova, V. D., Jastroch, N., & Ku, C. S. (2013, June 24-26). Information Flows and Risk Management in Innovation-driven, Collaborative Ventures. *IEEE International Conference on Technology and Innovation Management & 19th ICE Conference*, (pp. 1-11). The Hague, the Netherlands. <https://doi.org/10.1109/ITMC.2013.7352678>
16. Ku, C. S., Kirova, V. D., Marlowe, T. J., & Jastroch, N. (2012, July 17-20). The Multi-dimensional Unified Process for Inter-Organizational Collaborative Software Development. *The 2nd International Symposium on Collaborative Enterprises: CENT 2012 – Collaborative Development and Engineering Driving Innovation; in the 16th World Multi-Conference on Systemics, Cybernetics and the Complexity Informatics: WMSCI 2012, Volume I*, (pp. 264-266), Orlando, Florida, USA. ISBN-13: 978-1-936338-62-7.
17. Jastroch, N., Kirova, V. D., Ku, C. S., Mohtashami, M., Marlowe, T. J., & Nousala, S. (2011, July 19-22). Collaboration, Product and Knowledge. *International Symposium on Collaborative Enterprises: CENT 2011 – Platforms, Processes, and Practices Advancing the Enterprise 2.0; in the 15th World Multi-Conference on Systemics, Cybernetics and Informatics: WMSCI 2011*, Orlando, Florida, USA. <https://ssrn.com/abstract=1906622>
18. Mohtashami, M., Ku, C. S., & Marlowe, T. J. (2011, July 19-22). Metrics are Needed for Collaborative Software Development. *International Symposium on Collaborative Enterprises: CENT 2011 – Platforms, Processes, and*

19. Jastroch, N., Kirova, V. D., Ku, C. S., Marlowe, T. J., & Mohtashami, M. (2011, June 20-22). Adapting Business and Technical Processes for Collaborative Software Development. *Proceedings of the 17th International Conference on Concurrent Enterprising (ICE 2011)*, (pp. 1-8). Aachen, Germany. INSPEC Accession Number: 12289921.
20. Jastroch, N., Kirova, V. D., Ku, C. S., Marlowe, T. J., & Mohtashami, M. (2010, December 7-9). Software Engineering must be Collaboration-Aware. *Proceedings of the 22nd International Conference on Software & Systems Engineering and their Applications (ICSSEA 2010)*, Paris, France.
21. Ku, C. S. & Marlowe, T. J. (2010, June 29-July 2). Software Metrics for Collaborative Software Engineering Projects. *Invited Session on Collaborative Knowledge Management (CKM 2010), the 4th International Conference on Knowledge Generation, Communication and Management (KGCM 2010), Proceedings of the 14th World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI 2010)*, IIIS (International Institute of Informatics and Systemics), Volume III, (pp. 7-12), Orlando, Florida, USA. ISBN 978-1-936338-00-9.
22. Ku, C. S., Marlowe, T. J., Budanskaya, T., & Kang, P. K. (2007, June 25-28). Software Engineering Design Patterns for Relational Databases. *Proceedings of the 2007 International Conference on Software Engineering Research and Practice (SERP '07)*, CSREA Press, Volume II, (pp. 340-344), Las Vegas, Nevada, USA.
23. Ku, C. S., Marlowe, T. J., & Mantell, N. M. (2006, July 6-8). Design Patterns across Software Engineering and Relational Databases. *Proceedings of the 15th International Conference on Software Engineering and Data Engineering (SEDE-2006)*, (pp. 271-274), Los Angeles, California, USA.
24. Hu, E. W., Ku, C. S., Russo, A. T., Su, B., & Wang, J. (2006, June 26-29). New DSP Benchmark based on Selectable Mode Vocoder (SMV). *Proceedings of the 2006 International Conference on Computer Design (CDES'06)*, CSREA Press, (pp. 175-181), Las Vegas, Nevada, USA.
25. Ku, C. S., Yoon, S. C., & Brooks, G. M. (2005, June 20-23). An Efficient Design and Implementation of a Heterogeneous Deductive Object-Oriented Database System. *Proceedings of the 2005 International Conference on Information and Knowledge Engineering (IKE'05)*, CSREA Press, (pp. 135-141), Las Vegas, Nevada, USA. ISBN 1-932415-81-5.
26. Marlowe, T. J., Ku, C. S., & Benham, J. W. (2005, February 23-27). Design Patterns for Database Pedagogy: A Proposal. *Proceedings of the 36th SIGCSE Technical Symposium on Computer Science Education (SIGCSE 2005)*, *ACM SIGCSE Bulletin*, Vol. 37, No. 1, (pp. 48-52), St. Louis, Missouri, USA. ISBN 1-58113-997-7.
27. Im, S. H., Han, H. C., Youn, C., Ku, C. S., Cheon, S. W., & Kwon, K. C. (2004, September 19-22). Construction of an Effective Parallel Development Environment for Nuclear Power Plant Instrumentation and Control Software Systems. *Proceedings of the 4th American Nuclear Society International Topical Meeting on Nuclear Plant Instrumentation, Control and Human Machine Interface Technology (NPIC&HMIT 2004)*, Columbus, Ohio, USA.
28. Ku, C. S. & Zhou, Y. H. (2004, June 21-24). Qualitative Evaluation Profiles of Data-Warehousing Systems. *Proceedings of the International Conference on Software Engineering Research and Practice (SERP'04)*, CSREA Press, Volume II, (pp. 587-593), Las Vegas, Nevada, USA. ISBN 1-932415-29-7.
29. Ku, C. S. (2004, March 18-20). Qualitative Evaluation of Information Systems Using Kiviat Graphs. *Proceedings of the ISCA (International Society for Computers and Their Applications) 19th International Conference on Computers and Their Applications*, (pp. 122-126), Seattle, Washington, USA. ISBN 1-880843-50-1.
30. Yoon, S. C. & Ku, C. S. (1995, June 22-24). Semantic Query Processing in Deductive Object-Oriented Databases. *Proceedings of the Seventh International Conference on Software Engineering and Knowledge Engineering*, KSI, (pp. 358-365), Rockville, Maryland, USA. ISBN 0-9641699-2-4.

31. Ku, C. S., Kim, H. D., & Youn, C. (1994, March 17-19). Compilation of Non-Linear Recursive Formulas in Deductive Database using Graph Model. *Proceedings of the ISCA (International Society for Computers and their Applications) International Conference on Computers and their Applications*, (pp. 33-37), Long Beach, California, USA. ISBN 1-880843-08-0.
32. Youn, C. & Ku, C. S. (1993, March 10-12). An Approach to Compiling Non-Linear Recursive Formulas in Deductive Databases. *Proceedings of the ISCA (International Society for Computers and their Applications) International Conference on Computer Applications in Design, Simulation, and Analysis*, (pp. 169-172), Washington, D. C., USA. ISBN 1-880843-04-8.
33. Youn, C. & Ku, C. S. (1992, October 18-21). Data Migration. *Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics*, Volume 2, (pp. 1255-1258), Chicago, Illinois, USA. IEEE Catalog Number 92CH3176-5.
34. Youn, C. & Ku, C. S. (1992, March 11-13). Handling Recursive Formulas with Repeated Variables in Deductive Databases. *Proceedings of the ISMM (International Society for Mini and Microcomputers) International Conference on Computer Applications in Design, Simulation, and Analysis*, (pp. 163-166), Orlando, Florida, USA. ISBN 1-880843-00-5.
35. Youn, C. & Ku, C. S. (1991, May 15). Transformation of the Entity-Relationship Model into an Object-Oriented Approach. *Proceedings of the BOOST (Bellcore Object-Oriented Systems Technology) Symposium*, (pp. 229-238), New Brunswick, New Jersey, USA. Bellcore Special Report SR-TSV-001975.
36. Ku, C. S., Youn, C., & Kim, H. J. (1991, March 19-21). An Object-Oriented Entity-Relationship Model. *Proceedings of the ISMM (International Society for Mini and Microcomputers) International Conference on Computer Applications in Design, Simulation, and Analysis*, ACTA Press, (pp. 55-58), Las Vegas, Nevada, USA. ISBN 0-88986-180-3.

PEER-REVIEWED (REFEREED) CONFERENCE PRESENTATIONS:

1. Choi, J. A. & Ku, C. S. (2026, May 20). Synthetic Social Media Analytics: A Hybrid GAN-LLM Architecture for Platform-Specific Influencer Marketing Analysis. *The 13th NJBDA (New Jersey Big Data Alliance) Annual Symposium*, Rowan University, Glassboro, New Jersey, USA.
2. McCarty, J. H., Choi, J. A., & Ku, C. S. (2026, May 20). Synthetic Data Generation of Social Media Comments Using SeqGAN for Influencer Marketing Analysis. (Poster Presentation). *The 13th NJBDA (New Jersey Big Data Alliance) Annual Symposium*, Rowan University, Glassboro, New Jersey, USA.
3. Kashyap, R., Siqueira, A. C., Ku, C. S., Saghiri, A. M., & Aviles, M. (2026, May 20). Orchestrating Sustainability: A Multi-Agent Approach to AI-Driven Environmental ESG Performance. *The 13th NJBDA (New Jersey Big Data Alliance) Annual Symposium*, Rowan University, Glassboro, New Jersey, USA.
4. Siqueira, A. C., Kashyap, R., Saghiri, A. M., Ku, C. S., & Aviles, M. (2026, May 20). Use of Artificial Intelligence and AI Agents in Entrepreneurship and Sustainability Management. *The 13th NJBDA (New Jersey Big Data Alliance) Annual Symposium*, Rowan University, Glassboro, New Jersey, USA.
5. Choi, J. A. & Ku, C. S. (2025, November 20). Exploring Platform Strategy in Influencer Marketing Through the Lens of Synthetic Textual Data and Large Language Models. *NCA (National Communication Association) 111th Annual Convention: Communicate to Elevate*, Denver, Colorado, USA.
6. Wongchanapai, P., Green, R., Ku, C. S., Peltier, M. R., & Ranjan, S. (2025, November 13). Factors Impacting Gun Violence at the Regional Level, *2025 ASC (American Society of Criminology) Annual Meeting*, Washington, DC, USA.

7. Dodda, D., Ku, C. S., & Ranjan, S. (2024, November 14). Community Violence Intervention – Multidisciplinary Approaches to Data Collection. *2024 ASC (American Society of Criminology) Annual Meeting*, San Francisco, California, USA.
8. Peltier, M. R., Wongchanapai, P., Ku, C. S., Green, R., & Ranjan, S. (2024, November 13). Is There an Association between Air Pollution and Domestic Violence against Women in NJ? *2024 ASC (American Society of Criminology) Annual Meeting*, San Francisco, California, USA.
9. Weiner, D. M., Ku, C. S., Peltier, M. R., & Wells, M. (2024, May 6). A Comparative Study of Systematic Review Between Domain Experts and Machine Using Natural Language Processing and Text Mining in Clinical Psychiatry. (Poster Presentation). *APA (American Psychiatric Association) Annual Meeting*, New York City, New York, USA.
10. Ku, C. S., Peltier, M. R., Green, R., Wongchanapai, P., & Ranjan, S. (2024, March 20). Exploring the Spatial Relationship between Domestic Violence and Environmental Pollutants. *The 61st ACJS (Academy of Criminal Justice Sciences) Annual Meeting*, Chicago, Illinois, USA.
11. Choi, J. A. & Ku, C. S. (2023, November 17). What's in a Platform? Efficacy of Social Media Platforms for Influencer Endorsements. *NCA (National Communication Association) 109th Annual Convention: Freedom*, National Harbor, Maryland, USA.
12. Ku, C. S., Peltier, M. R., & Ranjan, S. (2023, November 16). Application of Text Mining for Systematic Reviews of Qualitative Research – A Case Study Using Hospital-based Violence Intervention Programs (HVIPs). *The 78th ASC (American Society of Criminology) Annual Meeting*, Philadelphia, Pennsylvania, USA.
13. Ku, C. S., Neudecker, C., & Ranjan, S. (2023, March 18). Healthcare Informatics–A Knowledge Discovery Approach. *ACJS (Academy of Criminal Justice Sciences) 60th Annual Meeting*, National Harbor, Maryland, USA. (Presented by Ranjan, S., Ku, C. S., & Green, R.)
14. Choi, J. A. (2022, May 9). Resolving Representational Harms in NLP: Identifying and Addressing Big Data-Driven Gender Bias in Natural Language Processing Models. *2022 NJBDA (New Jersey Big Data Alliance) Symposium*, New Jersey Institute of Technology, Newark, New Jersey, USA. Contents contributed by Choi, J. A., Ku, C. S., Kashyap, R., & Samuel, J.
15. Choi, J. A., Kashyap, R., Ku, C. S., & Samuel, J. (2022, April 8). Re-examining Social Media Data: Reducing Bias and Disinformation in Natural Language Processing Systems. *The 51st Annual Northeast Decision Sciences Institute Conference (NEDSI 2022)*, Newark, New Jersey, USA.
16. Choi, J. A. & Ku, C. S. (2021, November 18). Renewal and Transformation of Public Trust in the COVID-19 Era: Lessons from Digital Media. *NCA (National Communication Association) 107th Annual Convention: Renewal and Transformation*, Seattle, Washington, USA.
17. Ku, C. S. (2021, September 14). Identifying the Public's Changing Concerns during a Global Health Crisis: Text Mining and Comparative Analysis of Tweets during the COVID-19 Pandemic. (Virtual Presentation). *The 6th IEEE/ACIS International Semi-Virtual Conference on Big Data, Cloud Computing, and Data Science Engineering (BCD 2021)*, Zhuhai, China. Contents contributed by Ku, C. S. & Choi, J. A. (Paper was published in a book chapter: https://doi.org/10.1007/978-3-030-92317-4_11)
18. Steinel, S. M., Freestone, D. M., & Ku, C. S. (2019, March 2). A Knowledge Discovery Approach to Analyzing Mental Health Problems in NYC. (Poster Presentation). *The 90th Meeting of the Eastern Psychological Association*, New York City, New York, USA.

TECHNICAL REPORTS:

1. Ku, C. S. & Marlowe, T. J. (2006, April). Qualitative Kiviat Graphs for System Optimization. *College of Science and Health – Center for Research Technical Report No. 152*, William Paterson University.

2. Ku, C. S. & Zhou, Y. H. (2003, October 21). Total Optimization Strategies in Data-Warehousing Systems. *College of Science and Health – Center for Research Technical Report No. 149*, William Paterson University.
3. Ku, C. S. (2003, September 8). Query Capabilities and Evaluation in Multi-Dimensional Databases within the Context of an Enterprise Data Warehousing Architecture. *College of Science and Health – Center for Research Technical Report No. 147*, William Paterson University.
4. Ku, C. S. (1996, September 6). CID/SAM/MOBE Data Requirements for the Generic Fiber Splice. *Bellcore Technical Memorandum*, BD-CSM-REQ-251.
5. Ku, C. S. (1996, September 6). CID/SAM/MOBE Data Requirements for the Antronix, Electroline, and Scientific Atlanta Full-Service Taps. *Bellcore Technical Memorandum*, BD-CSM-REQ-244.
6. Ku, C. S. (1996, July 31). Requirement Specifications for the New SAM Class 2 Set Names in TMM. *Bellcore Technical Memorandum*, BD-TMM-RQT5.0.3-237.
7. Ku, C. S. (1996, July 31). CID/SAM/MOBE Data Requirements for AT&T SLC3 NIU Equipment. *Bellcore Technical Memorandum*, BD-CSM-REQ-198.
8. Ku, C. S. (1996, July 31). CID/SAM/MOBE Data Requirements for AT&T FN (Fiber Node) Equipment. *Bellcore Technical Memorandum*, BD-CSM-REQ-199.
9. Ku, C. S. (1996, July 31). CID/SAM/MOBE Data Requirements for Sycor FDC-001, FDC-002, FDC-003, and FDC-005 Equipment. *Bellcore Technical Memorandum*, BD-CSM-REQ-200.
10. Ku, C. S. (1996, July 31). CID/SAM/MOBE Data Requirements for Sycor WDC-001 Equipment. *Bellcore Technical Memorandum*, BD-CSM-REQ-201.
11. Ku, C. S., Smith, S. N., & Purtscher, D. J. (1995, December 20). Requirements Specifications for Eliminating the Transport Design and Service Design (TDSD) Database-Issue 2. *Bellcore Technical Memorandum*, BD-CSM-REQ-7.
12. Ku, C. S. & Colaizzi, A. (1995, September 22). Requirement Specifications for the Relationship between Internal Connections and Ports in TMM. *Bellcore Technical Memorandum*, BD-TMM-RQT-25.
13. Feeley, E. M. & Ku, C. S. (1995, August). TMM Equipment Model Building Process. *Bellcore Technical Memorandum*, TM-24670.
14. Ku, C. S. & Webb, E. I. (1995, March 31). Requirement Specifications for the Download Process of Technology Management Module (TMM) to Support Phase I of Model Modifications. *Bellcore Technical Memorandum*, BD-TMM-RQT-17.
15. Ku, C. S. & El-Gayar, M. A. (1994, July 31). Feature Requirements Description for Changing an Equipment Enclosed Assembly Model Based on the Same Chassis. *Bellcore Technical Memorandum*, BD-TMM-RQT-5.
16. Ku, C. S. (1993, June 18). TMM 1.0 Chassis Model and Assembly Model Test Data for Rockwell LMS-3192 Span Termination System. *Bellcore Technical Memorandum*, TM-OPT-023064.
17. Ku, C. S. (1993, May 24). TMM 1.0 Chassis Model and Assembly Model Test Data for ADC/Kentrox T-TERM 220 Central Office Repeater Shelf. *Bellcore Technical Memorandum*, TM-OPT-022994.
18. Ku, C. S. (1993, May 24). TMM 1.0 Chassis Model and Assembly Model Test Data for AT & T Small Cross-Section Office Repeater Shelf. *Bellcore Technical Memorandum*, TM-OPT-022993.
19. Ku, C. S. (1992, June 30). ADEX Detailed Requirements: Performance Improvements in ADEX. *Bellcore Technical Memorandum*, TM-OPT-021779.

20. Ku, C. S. (1992, June 30). ADEX Release 2.0 Functional Requirements: The Enhancements of the Data Transformation Service. *Bellcore Technical Memorandum*, TM-OPT-020997.
21. Ku, C. S. & Wood, J. W. (1991, December 31). ADEX Release 2.0 Detail Requirements. *Bellcore Technical Memorandum*, TM-OPT-020274.
22. Ku, C. S. & Burbage, C. (1991, December 13). JOB/ADEX/JMOS-IF Engineering Work Order Data Interface Requirements. *Bellcore Technical Memorandum*, TM-OPT-020564.
23. Ku, C. S. & Wood, J. W. (1991, December 13). WPG/ADEX/JOB Engineering Work Order Data Interface Requirements. *Bellcore Technical Memorandum*, TM-OPT-020407.
24. Ku, C. S. & Tilley, T. B. (1991, December 13). JOB/ADEX/LFACS-IF Engineering Work Order Data Interface Requirements. *Bellcore Technical Memorandum*, TM-OPT-020344.
25. Ku, C. S. & Tilley, T. B. (1991, December 13). WPG/ADEX/LFACS-IF Loop Makeup Data Interface Requirements. *Bellcore Technical Memorandum*, TM-OPT-020343.
26. Bailey, M. C., Devaney, C. J., Ku, C. S., Mayer, A. J., Mulligan, M. E., & Webb, E. F. (1991, April 8). Business Needs Analysis Report of the Unit Inventory Architecture Team. *Bellcore Technical Memorandum*, TM-OPT-017624.
27. Kessmann, R. W. & Ku, C. S. (1985, July). Improved Signal Timing Plan Selection. *Technical Report for the Federal Highway Administration, U.S. Department of Transportation*, under contract DTFH61-84-C00018.
28. Kessmann, R. W., Ku, C. S., & Cooper, D. L. (1985, March). Labor Saving Methods for Improved Operation of Computer-Controlled Traffic Signal Systems: 1.5 Generation Functional Description and Software Development Guidelines. *Technical Report for the Federal Highway Administration, U. S. Department of Transportation*, under contract DTFH61-82-00091.
29. Kessmann, R. W., Ku, C. S., & Cooper, D. L. (1985, February). Alternative Control Strategy Evaluation and Detector Placement Guidelines for a 1.5 Generation Traffic Control System. *Technical Report for the Federal Highway Administration, U. S. Department of Transportation*, under contract DTFH61-82-00091.
30. Kessmann, R. W., Ku, C. S., & Cooper, D. L. (1985, February). Labor Saving Methods for Improved Operation of Computer-Controlled Traffic Signal Systems: 1.5 Generation Feasibility Study. *Technical Report for the Federal Highway Administration, U. S. Department of Transportation*, under contract DTFH61-82-00091.
31. Ku, C. S. & Lindquist, T. E. (1982, September). PEEP: A Pascal Environment for Experiments on Programming. *Technical Report CSIE-82-9*, Department of Computer Science, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

INVITED TALK / PRESENTATION

1. Von Dohlen, P., Wang, N., Ku, C. S., Champanerkar, J., Hill, D., Sharma, V. (2026, August 6). MaCS Scholars Program, *MAA (Mathematical Association of America) MathFest*, Boston, Massachusetts, USA. Presented by Von Dohlen, P.
2. Ku, C. S. (2024, October 11). What Makes a Machine Intelligent? (Computer Architecture and Artificial Intelligence). *Cognitive Science I - Seminar (CGSI 2000) class*, Department of Psychology/Honors College – Cognitive Science Track, William Paterson University, Wayne, New Jersey, USA.
3. Ku, C. S. (2024, May 2). Exploring the Spatial Relationship between Domestic Violence and Environmental Pollutants. *GS-LSAMP (Garden State – Louis Stokes Alliance for Minority Participation) Meeting*, College of Science and Health, William Paterson University, Wayne, New Jersey, USA.

4. Laracy, J. R., Marlowe, T. J., Ku, C. S., & Kirova, V. D. (2023, December 8). Ethics in the Era of Artificial Intelligence – Personal, Professional and Societal. *Computer Science Departmental Seminar*, Department of Mathematics and Computer Science, Seton Hall University, South Orange, New Jersey, USA. Presented by Marlowe, T. J.
5. Laracy, J. R., Marlowe, T. J., Ku, C. S., & Kirova, V. D. (2023, November 17). Ethics in the Era of Artificial Intelligence – Personal, Professional and Societal. *Conference on Civilizational Prospects: Engaging Wicked Problems*, Seton Hall University, South Orange, New Jersey, USA. Contents contributed by Laracy, J. R. & Marlowe, T. J.
6. Zuta, E. & Ku, C. S. (2023, September 28). Sentiment Analysis on Social Media Data. *MaCS Scholars Summer Research Presentation*, William Paterson University, Wayne, New Jersey, USA.
7. Ku, C. S. (2023, February 9). Data Science Research in the Computer Science Department. *GS-LSAMP (Garden State – Louis Stokes Alliance for Minority Participation) Meeting*, College of Science and Health, William Paterson University, Wayne, New Jersey, USA.
8. Ku, C. S. (2022, October 6). Cognitive Science: Perspectives from Computer Science (Artificial Intelligence and Computer Architecture). *Cognitive Science I - Seminar (CGSI 2000) class*, Department of Psychology/Honors College – Cognitive Science Track, William Paterson University, Wayne, New Jersey, USA.
9. Champanerkar, J., von Dohlen, P., Ku, C. S., Liu, W., Hill, D., & Sharma, V. (2022, September 29). Supporting Undergraduate Mathematics and Computer Science Students with Scholarships and Culturally Responsive Mentoring. *AAAS (American Association for the Advancement of Science) S-STEM Symposium*, Washington, D. C., USA. Presented by Champanerkar, J.
10. Ku, C. S. & Choi, J. A. (2021, October 5). Big Data Analytics on Social Media Data. *Computer Science Seminar (CS 4800) class*, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA. Presented by Ku, C. S.
11. Ku, C. S. (2021, March 11). Big Data Analytics (Natural Language Processing and Text Mining) on Social Media Data. *GS-LSAMP (Garden State – Louis Stokes Alliance for Minority Participation) Meeting*, College of Science and Health, William Paterson University, Wayne, New Jersey, USA.
12. Ku, C. S. (2020, October 1). Computer Architecture, Artificial Intelligence, and Their Relationship to Neuroscience. *Cognitive Science I - Seminar (CGSI 2000) class*, Department of Psychology/Honors College – Cognitive Science Track, William Paterson University, Wayne, New Jersey, USA.
13. Novikov, D., Ku, C. S., & Choi, J. A. (2020, April). A Web-based Platform for Mining and Analyzing Social Media Data. (Poster Presentation). *EXPLORATIONS: Research, Scholarship and Creative Expression at William Paterson University*, Wayne, New Jersey, USA. Presented by Novikov, D.
14. Cordova, N. K. (2019, May 3). A Knowledge Discovery Approach to Mental Health Problems in New York City. *Computer Science Advisory Board Meeting*, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA. Contents contributed by Steinel, S. M., Cordova, N. K., Ku, C. S., Basch, C. H., & Hillyer, G. C.
15. Steinel, S. M., Cordova, N. K., Ku, C. S., Basch, C. H., & Hillyer, G. C. (2019, April 4). A Knowledge Discovery Approach to Mental Health Problems in New York City: Phase Two. (Poster Presentation). *EXPLORATIONS: Research, Scholarship and Creative Expression at William Paterson University*, Wayne, New Jersey, USA. Presented by Steinel, S. M. & Cordova, N. K.
16. Ku, C. S. (2018, October 10). Artificial Intelligence: An Overview. *Cognitive Science I - Seminar (CGSI 2000) class*, Department of Psychology/Honors College – Cognitive Science Track, William Paterson University, Wayne, New Jersey, USA.

17. Ku, C. S. (2018, May 4). Data Science Research in the Department of Computer Science at William Paterson University. *Computer Science Advisory Board Meeting, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.*
18. Steinel, S. M., Ku, C. S., Basch, C. H., & Marlowe, T. J. (2018, April 10). A Knowledge Discovery Approach to Mental Health Problems in New York City: Phase One. (Poster Presentation). *EXPLORATIONS: Research, Scholarship and Creative Expression at William Paterson University, Wayne, New Jersey, USA.* Presented by Steinel, S. M.
19. Ku, C. S. (2018, March 22). Data Science Research in the Department of Computer Science at William Paterson University. *Computer Science Seminar, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.*
20. Ku, C. S. (2017, November 6). My Big Data Project Stories. *Computer Science Seminar, Department of Mathematics and Computer Science, Seton Hall University, South Orange, New Jersey, USA.*
21. Ku, C. S. (2017, November 3). My Big Data Project Stories. *Computer Science Seminar (CS 4800) class, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.*
22. Ku, C. S. (2017, November 3). Cognitive Science: A Computer Science Perspective. *Cognitive Science I (CGSI 2000) class, Department of Psychology/Honors College – Cognitive Science Track, William Paterson University, Wayne, New Jersey, USA.*
23. Ocampo, A. K. & Ku, C. S. (2017, May 5). Data Analytics for YRBS (Youth Risk Behavior Survey) Data using Machine Learning and Data Mining Techniques. (Poster Presentation). *EXPLORATIONS: Research, Scholarship and Creative Expression at William Paterson University, Wayne, New Jersey, USA.* Presented by Ocampo, A. K.
24. Ocampo, A. K. & Ku, C. S. (2017, April 6). Data Analytics for YRBS (Youth Risk Behavior Survey) Data using Machine Learning and Data Mining Techniques. *Computer Science Advisory Board Meeting, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.* Presented by Ocampo, A. K.
25. Ku, C. S. (2016, November 4). Cognitive Science: A Computer Science Perspective. *Cognitive Science I (CGSI 2000) class, Department of Psychology/Honors College – Cognitive Science Track, William Paterson University, Wayne, New Jersey, USA.*
26. Ocampo, A. K. & Ku, C. S. (2016, April 19). The WPU YRBS (Youth Risk Behavior Survey) Data Mart. (Poster Presentation). *EXPLORATIONS: Research, Scholarship and Creative Expression at William Paterson University, Wayne, New Jersey, USA.* Presented by Ocampo, A. K.
27. Ku, C. S. (2015, November 20). Cognitive Science: A Computer Science Perspective. *Cognitive Science I (CGSI 2000) class, Department of Psychology/Honors College – Cognitive Science Track, William Paterson University, Wayne, New Jersey, USA.*
28. Ku, C. S. (2015, November 6). Requirements Elicitation and Knowledge Management for Big Data Projects. *Computer Science Seminar, Department of Mathematics and Computer Science, Seton Hall University, South Orange, New Jersey, USA.*
29. Ku, C. S. (2015, April 2). The Extension of the Unified Process. *University Research and Scholarship Days, William Paterson University, Wayne, New Jersey, USA.*
30. Ku, C. S. (2014, October 31). Artificial/Machine Intelligence: An Overview. *Computer Science Seminar, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.*
31. Ku, C. S. (2014, October 27). The Multi-Dimensional Unified Process. *Computer Science Colloquium, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.*

32. Ku, C. S. (2014, April 3). The Multi-Dimensional Unified Process for Collaborative Software Development. *University Research and Scholarship Day*, William Paterson University, Wayne, New Jersey, USA.
33. Ku, C. S. (2013, October 18). Artificial/Machine Intelligence: An Overview. *Cognitive Science I (CGSI 2000) class*, Department of Psychology/Honors College – Cognitive Science Track, William Paterson University, Wayne, New Jersey, USA.
34. Zaluska, B., Avila, E., Hu, E. W., Ku, C. S., & Su, B. (2013, April 4). Performance Prediction of Multi-Core DSP Processor using a Statistical Approach. (Poster Presentation). *University Research and Scholarship Day*, William Paterson University, Wayne, New Jersey, USA. Presented by Zaluska, B.
35. Ku, C. S. (2013, April 4). Collaborative Agile Multi-Dimensional Unified Process. *University Research and Scholarship Day*, William Paterson University, Wayne, New Jersey, USA.
36. Ku, C. S. (2012, December 7). Artificial/Machine Intelligence: An Overview. *Cognitive Science I (CGSI 2000) class*, Department of Psychology/Honors College – Cognitive Science Track, William Paterson University, Wayne, New Jersey, USA.
37. Ku, C. S. (2012, November 26). Abstraction in Computer Science. *Invited Talk*, Department of Computer Science, Montclair State University, Montclair, New Jersey, USA.
38. Jastroch, N., Ku, C. S., Marlowe, T. J., & Kirova, V. D. (2012, October 12). Advanced Collaborative Enterprise Systems. *ACES FlnES Cluster Meeting, European Commission*, Brussels, Belgium. Presented by Jastroch, N.
39. Ku, C. S. (2012, April 5). Collaborative Software Engineering Models. *University Research and Scholarship Day*, William Paterson University, Wayne, New Jersey, USA.
40. Ku, C. S. (2011, November 11). Artificial Intelligence: An Overview. *Cognitive Science I (CGSI 2000) class*, Department of Psychology/Honors College – Cognitive Science Track, William Paterson University, Wayne, New Jersey, USA.
41. Ku, C. S. (2011, October 22). Database Development. *Information Systems Management (NUR 7320) class*, Department of Nursing, William Paterson University, Wayne, New Jersey, USA.
42. Ku, C. S. (2011, April 7). The Complexity of DSP Benchmark Functions in Multi-Core Environments. *University Research and Scholarship Day*, William Paterson University, Wayne, New Jersey, USA.
43. Ku, C. S. (2011, February 28). The Complexity of DSP Benchmark Functions in Multi-Core Environments. *Computer Science Seminar (CS 480)*, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.
44. Kaufman, L. & Ku, C. S. (2011, February 17). Collaborative Teaching Strategies of Object-Oriented Paradigm across the Curriculum. *College of Science and Health Faculty Meeting*, William Paterson University, Wayne, New Jersey, USA.
45. Ku, C. S. (2010, April 1). Software Metrics for Collaborative Software Engineering Projects. *University Research and Scholarship Day*, William Paterson University, Wayne, New Jersey, USA.
46. Ku, C. S. (2010, March 29). Software Metrics for Collaborative Software Engineering Projects. *Computer Science Seminar (CS 480)*, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.
47. Ku, C. S. (2009, April 2). Performance Analysis of Digital Signal Processors Using SMV Benchmark. *University Research and Scholarship Day*, William Paterson University, Wayne, New Jersey, USA.

48. Ku, C. S. (2009, March 6). Performance Analysis of Digital Signal Processors Using SMV Benchmark. *Computer Science Seminar (CS 480)*, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.
49. Ku, C. S. (2007, September 14). Software Engineering Design Patterns for Relational Databases. *Computer Science Seminar (CS 480)*, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.
50. Ku, C. S. & Kang, P. K. (2007, April 5). Software Engineering Design Patterns for Relational Databases. (Poster Presentation). *University Research and Scholarship Day*, William Paterson University, Wayne, New Jersey, USA.
51. Ku, C. S. (2007, March 5). Software Engineering Design Patterns for Relational Databases. *Computer Science Seminar (CS 480)*, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.
52. Ku, C. S. & Kang, P. K. (2007, February 15). Design Patterns for Relational Databases. (Poster Presentation) *CfR Faculty-Student Scholarship Day*, The Center for Research, College of Science and Health, William Paterson University, Wayne, New Jersey, USA.
53. Ku, C. S. & Mantell, N. M. (2006, April 20). Design Patterns across Software Engineering and Databases. (Poster Presentation). *University Research and Scholarship Day*, William Paterson University, Wayne, New Jersey, USA.
54. Ku, C. S. & Mantell, N. M. (2006, February 2). Design Patterns across Software Engineering and Databases. (Poster Presentation). *Faculty-Student Scholarship Day*, The Center for Research, College of Science and Health, William Paterson University, Wayne, New Jersey, USA.
55. Brooks, G. M. & Ku, C. S. (2005, April 8). An Efficient Design and Implementation of a Deductive Object-Oriented Database System. (Poster Presentation). *The 16th Annual Saint Joseph's University Sigma Xi Student Research Symposium*, Philadelphia, Pennsylvania, USA.
56. Ku, C. S. & Brooks, G. M. (2004, October 22). Data Modeling and Query Processing in the Heterogeneous Architecture of Deductive Object-Oriented Database Systems. (Poster Presentation). *Faculty-Student Scholarship Day*, The Center for Research, College of Science and Health, William Paterson University, Wayne, New Jersey, USA.
57. Zhou, Y. H. & Ku, C. S. (2004, April 23). Qualitative Evaluation of Data-Warehousing Systems. (Poster Presentation). *The 15th Annual Saint Joseph's University Sigma Xi Student Research Symposium*, Philadelphia, Pennsylvania, USA.
58. Ku, C. S. & Zhou, Y. H. (2004, April 15). Qualitative Evaluation Profiles of Data-Warehousing Systems. *University Research & Scholarship Day*, William Paterson University, Wayne, New Jersey, USA.
59. Ku, C. S. (2004, March 26). A Deductive Object-Oriented Database System. *Computer Science Seminar (CS 480)*, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.
60. Ku, C. S. (2003, November 3). Qualitative Performance Profiles in Data-Warehousing Systems. *Computer Science Seminar (CS 480)*, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.
61. Ku, C. S. (2003, October 24). Total Optimization Strategies in On-Line Analytical Processing (OLAP) Systems. *Faculty-Student Scholarship Day*, The Center for Research, College of Science and Health, William Paterson University, Wayne, New Jersey, USA.
62. Ku, C. S. (2003, March 12). Query Capabilities and Evaluation in Multi-Dimensional Databases. *Computer Science Seminar (CS 480)*, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.
63. Ku, C. S. (2002, April 23). Query Capabilities and Evaluation in Multi-Dimensional Databases. *Invited Talk*, Department of Computer Science, Monmouth University, West Long Branch, New Jersey, USA.

64. Ku, C. S. (2002, February 22). Query Capabilities and Evaluation in Multi-Dimensional Databases. *Invited Talk*, Department of Computer Science, William Paterson University, Wayne, New Jersey, USA.
65. Ku, C. S. (2001, March 2). Intelligent Database Designs and Query Capabilities. *Invited Talk*, Department of Mathematics and Computer Science, Seton Hall University, South Orange, New Jersey, USA.
66. Ku, C. S. (2000, March 22). Intelligent Database Systems – From Foundation to Architecture. *Invited Talk*, Department of Computer Science, Stevens Institute of Technology, Hoboken, New Jersey, USA.
67. Ku, C. S. (1997, April 18). An Efficient Inference Scheme in Expert Database Systems. *Invited Talk*, Department of Computer Science, Monmouth University, West Long Branch, New Jersey, USA.
68. Ku, C. S. (1994, July 13). TMM - Technology Management Module. *Invited Talk*, Broadband Protocol Engineering Sect, Broadband Communication Department, Electronics and Telecommunications Research Institute (ETRI), Taejon, South Korea.
69. Ku, C. S. (1994, July 11). TMM - Technology Management Module. *Invited Talk*, Department of Computer Science and Statistics, Seoul National University, Seoul, South Korea.
70. Ku, C. S. (1994, July 8). TMM - Technology Management Module. *Invited Talk*, Department of Computer Science, Chungnam National University, Taejon, South Korea.
71. Ku, C. S. (1992, April 15). An Efficient Indefiniteness Inference Scheme in Indefinite Deductive Databases. *Invited Talk*, Department of Computer Science, Radford University, Radford, Virginia, USA.
72. Ku, C. S. (1991, October 23). Data Integration. *Invited Talk*, Department of Electrical Engineering and Computer Science, Northwestern University, Evanston, Illinois, USA.
73. Ku, C. S. (1989, May 23). Incremental Compilation of Rules in Indefinite Deductive Databases. *Invited Talk*, International Business Machines Corporation (IBM), Poughkeepsie, New York, USA.
74. Ku, C. S. (1989, May 3). Incremental Compilation of Rules in Indefinite Deductive Databases. *Invited Talk*, Bell Communications Research (Bellcore), Morristown, New Jersey, USA.
75. Ku, C. S. (1989, April 27). Incremental Compilation of Rules in Indefinite Deductive Databases. *Invited Talk*, Department of Computer Engineering, The University of Kansas, Lawrence, Kansas, USA.
76. Ku, C. S. (1989, March 31). Incremental Compilation of Rules in Indefinite Deductive Databases. *Invited Talk*, Electronic Data Systems Corporation (EDS), Auburn Hills, Michigan, USA.
77. Ku, C. S. (1989, March 17). Incremental Compilation of Rules in Indefinite Deductive Databases. *Invited Talk*, Corporate Research and Development, General Electric Company (GE), Schenectady, New York, USA.