Ganapathy (Gana) Natarajan
Ph.D., CPEM®, ASEM Fellow

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A.Education and Employment Information

A1. Education

2012	Ph.D., Systems and Engineering Management Texas Tech University Advisor: David Wyrick **Dissertation Title:** Developing an Environmental Sustainability Index (EnvSI) for Small and Medium-sized Enterprises (SMEs) in the United States: The Case of West Texas
2008	M.S., Engineering Management University of Minnesota Duluth Advisors: David Wyrick and Richard Lindeke **Thesis Title:** Communication in Technical Organizations: A Designed Experiment Approach
2006	B.E., Mechanical Engineering Anna University, India **Senior Design Project:** Improving Efficiency of Thermal Power Plant Condenser in Thermal Power Plant I at Neyveli Lignite Corporation

A2. Professional Experience

Jul 2019 – Present	Assistant Professor College of Engineering, Mathematics, and Science University of Wisconsin Platteville, Platteville, WI 53818 **Job Responsibilities:** Taught courses in the Industrial Engineering and the online M.Eng programs Developed new instructional materials for in-person, online, and hybrid courses Conducted research related to the teaching and engineering education Served on departmental, college, and university wide committees **Additional Appointment:** College of EMS SOTL Coordinator and CenterPOINT faculty fellow (2020 – present).

Sept. 2014–Jun. 2019	Instructor School of Mechanical, Industrial, and Manufacturing Engineering Oregon State University, Corvallis, OR 97331

Job Responsibilities:
Taught courses in the Industrial Engineering and the online M.Eng Engineering Management program
Developed new instructional materials for in-person, online, and hybrid courses
Served on departmental, college, and university wide committees

Sep. 2012 – Jun. 2014	Assistant Professor (teaching) Department of Mechanical and Industrial Engineering University of Minnesota Duluth, Duluth, MN 55812

Job Responsibilities:
Taught courses in the Mechanical Engineering, Industrial Engineering, and hybrid M.S. in Engineering Management programs
Developed new instructional materials for the in-person and hybrid courses
Facilitated laboratories for undergraduate students

Spring 2013, 2014	Adjunct Instructor (additional appointment) Labovitz School of Business and Economics University of Minnesota Duluth, Duluth, MN 55812

Job Responsibilities:
Taught courses in the undergraduate and MBA programs, including the weekend MBA program on the Rochester campus
Developed new instructional materials for courses in Production and Operations management
Graded student work

Nov. 2008 – Feb. 2009	Consulting Engineer Natural Resources Research Institute, Duluth, MN 55811

Job Responsibilities:
Suggested materials to minimize wear of a patented conveyor belt
Suggested changes in design to increase effectiveness of taconite pellet separation
Worked on flexible materials like epoxy resins

A3. Lifelong Learning

Aug 2020	Deep Learning with Python – self-taught
Feb 2018	Data Visualization and Data Mining with R on StackSkills

Jul 2015	Exploratory Data Analysis using R on Udacity
Jun 2014	More Data Mining Using Weka on Weka MOOC
Apr 2015	Data Mining using Weka on Weka MOOC

B. Teaching, Advising, and Other Assignments

B1. Instructional Summary

Courses taught at current institution are listed on the top of the table.

Course Name	Term(s)	Institution
IE 3530 Operations Research I (online)	Every Summer since 2019	UWP
IE 3530 Operations Research I (on-campus)	Every Fall since 2019	UWP
IE 4730/3730 Engineering Management (online)	Every Summer since 2020	UWP
IE 4730/3730 Engineering Management (on-campus)	Fall 2019 and Every Spring since 2020	UWP
IE 4980 Current Topics: Operations Research II (on-campus)	Even Spring since 2020	UWP
IE 4030 Production and Operations Analysis (on-campus)	Every Fall since 2020	UWP
IE 4930 Industrial Systems Design (only lab sections)	Fall 2020 – Fall 2021	UWP
IE 4750 Principles and Applications of Project Management	Spring 2021	UWP
ENGRG 7510 Design of Experiments (online graduate course)	Fall 2021	UWP
ENGRG 7030 System Simulation (online graduate course)	Summer 2022	UWP
EGR 1206 Engineering Graphics (on-campus location)	Fall 2009 – Fall 2011	TTU
ME 4122 Heat Transfer, Thermodynamics and Fluid Mechanics Laboratory (on-campus undergraduate lab course)	Fall 2012 – Spring 2014	UMD
EMGT 5110 Management of Engineers and Technology (on-campus and distance locations – evening class)	Fall 2012	UMD
EMGT 5230 Technical Forecasting (on-campus and distance locations – evening class)	Fall 2012	UMD

Course Name	Term(s)	Institution
IE 4020 / EMGT 5240 Lean Production Management/ Advanced Operations Management (on-campus undergrad and graduate combined class)	Spring 2013, Spring 2014	UMD
IE 5325 Advanced Engineering Economics (on-campus – evening class)	Spring 2013	UMD
MBA 8311 Operations Management (on-campus and off-campus locations)	Spring 2013, Spring 2014	UMD
IE 4115 Facility Planning and Simulation (on-campus lab and lecture course)	Fall 2013	UMD
FMIS 3301 Production and Operations Management (on-campus)	Spring 2014	UMD
ENGR 390 Engineering Economy (on-campus) *	Fall 2014 – Spring 2016	OSU
ENGR 390 Engineering Economy (e-campus) *	Every quarter since Fall 2016	OSU
IE 582 Introduction to Management for Engineers and Scientists (e-campus) *	Fall 2014 – Spring 2016 (incl. summer quarter) Summer 2017	OSU
IE 571 Project Management in Engineering (e-campus) *	Winter 2015	OSU
IE 581 Operations Management (e-campus) *	Every Spring since 2015	OSU
ENGR 112 Introduction to Engineering Computing (e-campus) *	Spring 2015	OSU
ENGR 391 Engineering Economy and Project Management (on-campus) *	Winter 2016 – Spring 2018	OSU
IE 583 Advanced Engineering Economics (e-campus) *	Summer 2016	OSU
IE 587 Management Information Systems (e-campus) *	Spring 2017	OSU
IE 588 Management of New Product Development (e-campus) *	Spring 2017	OSU

Course Name	Term(s)	Institution
IE 356 Experimental Design for Industrial Processes (on-campus)*	Spring 2018	OSU
IE 589 Professional Responsibility and Ethics (e-campus)*	Spring 2018	OSU
IE 594 Research Methods in Engineering (on-campus)*	Spring 2018	OSU
IE 552 Design of Industrial Experiments (on-campus)*	Winter 2019	OSU

*10-week quarters

B2. Advising

I currently advise 28 undergraduate students as an academic advisor.

Graduate advisees and research advisees are listed below. Graduate advisees are through a courtesy appointment maintained with Oregon State University.

B2.1. Graduate Advisees

MEng Advisor:

Graduated:

1. Lauren Bales, MEng, 2018
2. Ingrid Scheel, MEng, 2018
3. Craig Kensel, MEng, 2019

Minor Professor or Committee Member:

Graduated

1. Tara Larson, Meng, 2020
2. Joel Duhn, MEng, 2019
3. Sarah Jarrett, MEng, 2019
4. Amanda Kniepkamp, MEng, 2019
5. Jay Lui, MEng, 2019
6. Mark Patterson, MEng, 2018
7. Richard Shults, MEng, 2018
8. Sean Lindsay, MEng, 2018
9. Jessica Powers, MEng, 2018
10. Garth Tingey, MEng, 2018
11. Bryson Kampstra, MEng, 2017
12. Michelle Powell, MEng, 2017
13. Darin Schnoor, MEng, 2017

14. Blake Weimer, MEng, 2017
15. Cody Kopriva, MS, 2016
16. Aaron Sprunger, MS, 2017

Current

1. Asieh Varayani, Ph.D.
2. Chuddy Atagbuzia, M.S. and Ph.D.
3. Joseph Giralt, MEng
4. Jason Kozlowski, MEng
5. Jason Chapple, MEng

B2.2. Undergraduate Advisees

1. Marshall Paider, Undergraduate Research Assistant, 2020 – present, UW – Platteville
2. Kaitlyn Garey, Undergraduate Research Assistant, Spring 2022, UW – Platteville
3. Natalie Miller, Undergraduate University Honors Thesis, 2017 – Committee Member
4. Linda Nguyen, Undergraduate Research Assistant, 2018
5. Rachel Reintjes, Undergraduate Research Assistant, 2018

B2.3. Other Advising

Senior Design project advisor for multiple teams every semester since Fall 2019

Faculty Advisor - Tau Beta Pi (Engineering Honor Society), WI-Epsilon Chapter since Fall 2021

Founder and Facilitator, Data Driven Decision Analysis Group (D^3AG) – interest group for students since Spring 2022

C. Scholarship and Creative Activity

C1. Publications

On joint publications, my role is indicated. For peer reviewed conferences, acceptance rates are also provided, when available.

C1.1. Peer-reviewed and Refereed Publications

1. Ramanathan, N., Ramamurthy, J., & **Natarajan, G.** (2021). "Numerical Characterization of DNA Sequences for Alignment-free Sequence Comparison-A Review." *Combinatorial Chemistry & High Throughput Screening*. (Manuscript preparation covering sections on numerical descriptors)
2. Atagbuzia C., Ng E., and **Natarajan G.**, "Factors Affecting Safety Culture: What's Missing? *Proceedings of the ASEM 2021 International Annual Conference,* October 2021. (Mentoring. Graduate student project. Acceptance rate: 90%)
3. **Natarajan G.,** Ng E., Schott E., and Keathley H., "Round Table Presentation Format: Lessons Learned and Application to Active Learning Pedagogies." *Proceedings of the ASEM 2020 International Annual Conference,* October 2020. (Data Analysis and Manuscript Preparation. Acceptance rate: 90%)
4. Ashok A., **Natarajan G.,** Elmasri R., and Stvan L., "SimsterQ: A Similarity Based Clustering Approach to Question Answering." *Proceedings of the 2020 Annual Conference of the Association for Computational Linguistic*s, July 2020, Seattle, WA. (Data analysis and manuscript preparation. Acceptance rate: 62%)
5. Ng E., & **Natarajan G.,** "Extension or No Extension? A Study on the Value of Extending the Deadline for a Conference." *Proceedings of the ASEM 2019 International Annual Conference,* October 2019, Philadelphia, PA. (Data analysis and manuscript preparation. Acceptance rate: 76%)
6. Ashok A., **Natarajan G.,** & Elmasri R., "Using News Cycles to Explain Trends in Crude Oil Spot Prices." *Proceedings of the ASEM 2019 International Annual Conference*, October 2019, Philadelphia, PA. (Neural network design and manuscript preparation. Acceptance rate: 76%)
7. Ng E., Hou M., & **Natarajan G.,** "Exploring the Role of Peer Influence in Student's Decision between Online and Face-to-Face Class." *Proceedings of the ASEM 2019 International Annual Conference,* October 2019, Philadelphia, PA. (Student work. Provided input as needed. Acceptance rate: 76%)
8. Ashok A., Elmasri R., & **Natarajan G.**, "Comparing Different Word Embeddings for Multiword Expression Identification." *Proceedings of the NLDB 2019 Conference,* June 2019, Salford, Manchester, UK. (Statistical analysis and manuscript preparation. Acceptance rate: 28%)
9. **Natarajan G.,** Ng E., "The Use of Composite Indices in Performance Measurement of Engineering and Management Systems." *Proceedings of the ASEM 2017 International Annual Conference,* October 2017, Huntsville, AL. (Provided idea and prepared the manuscript. Acceptance rate: 60%)
10. **Natarajan G.**, Ashok A., "Methods and Variables used in Forecasting Fuel Prices: A Literature Review", *Proceedings of the 2016 Industrial and Systems Engineering Research Conference (ISERC),* May 2016, Anaheim, CA. (Provided idea and prepared the manuscript. Acceptance rate not available)
11. **Natarajan G.**, Simo Kush T., McGinnis N., "What Users Want From ASEM? An Analysis of ASEM Web Traffic and Social Media Data." *Proceedings of the ASEM 2015 International*

Annual Conference, October 7-10, 2015, Indianapolis, IN. (Provided idea and prepared the manuscript. Acceptance rate: 70%)

12. Egbue O., **Natarajan G.**, "The Transition to Sustainable Electricity Systems: A Socio-Technical Analysis." the *Proceedings of the 2015 Industrial and Systems Engineering Research Conference (ISERC*), Nashville, TN, USA, May 30 – June 2, 2015. (Second author. Acceptance rate not available)
13. Wyrick D., **Natarajan G**., Eseonu C., "Technology Policy for Promoting Environmental Sustainability in SMEs: Issues and Considerations for Effective Implementation." *Advances in Sustainable and Competitive Manufacturing Systems, Lecture Notes in Mechanical Engineering*, 2013, pp. 1237-1248. (Environmental Sustainability theory and concepts addressed in the article were contributed by me. Acceptance rate: 65-69%)
14. Ng E., **Natarajan G.**, Calvo-Amodio J., Simonton J., "When to Stop Beating a Dead Horse: Economics of Terminating a Failed Project," *Proceedings of the ASEM 2012 International Annual Conference*, Virginia Beach, Virginia, USA, October 17-20, 2012. (Second author. Idea development and part of the manuscript. Acceptance rate: 75%)
15. **Natarajan G.,** Wyrick D., "Environmental Sustainability in Manufacturing SMEs in West Texas," *Proceedings of the ASEM 2012 International Annual Conference*, Virginia Beach, Virginia, USA, October 17-20, 2012. (Provided idea and prepared the manuscript. Acceptance rate: 75%)
16. Wyrick D., **Natarajan G.,** Eseonu C., Lindeke R., Chen H., "Lean Management, Internationalization, Sustainability, and Technology Policy: Congruence or Turbulence?" *Proceedings of the 22nd International Conference on Flexible Automation and Intelligent Manufacturing*, Helsinki, Finland, June 10 – 13, 2012. (Contributed to the conceptual and theoretical models. Acceptance rate: 69%)
17. **Natarajan G.,** Eseonu C., "Environmental Sustainability Education: Tool to Improve Sustainable Entrepreneurship and Better Policy?" *Proceedings of the 119th American Society for Engineering Education Annual Conference and Exposition*, San Antonio, Texas, USA, June 10 – 13, 2012. (Initial idea and half the manuscript. Acceptance rate: 70-75%)
18. **Natarajan G.,** Wyrick D., "Sustainable Practices in Small and Medium-size Enterprises (SMEs) – A World View." *Proceedings of the ASEM 2011 International Annual Conference*, Lubbock, Texas, USA, October 19-22, 2011. (Primary author. Acceptance rate: 78%)
19. **Natarajan G.,** Wyrick D., "Framework for Implementing Sustainable Practices in SMEs in United States," *Lecture Notes in Engineering and Computer Science*, 2011, Vol. 2190, pp. 750-754. (Idea and manuscript preparation. Acceptance rate: 56.93%)
20. **Natarajan G.,** Wyrick D., Lindeke R., "Communication in Technical Organizations: A Designed Experiment Approach," *Lecture Notes in Engineering and Computer Science*, 2010, Vol. 2185, pp. 2369 – 2375. (Idea and manuscript preparation. Acceptance rate: 56.96%)
21. Jayalakshmi, R.; Natarajan, R.; **Natarajan, G.,** Vivekanandhan, M., "Descriptors based on information theory for numerical characterization of DNA sequences," *Current Science*, 2010, Vol.99, pp. 370-375. (Data analysis, computer code, and manuscript checking)
22. Jayalakshmi, R., Natarajan, R., **Natarajan, G.**, Vivekanandhan, M., "Alignment-Free Sequence Comparison Using N-Dimensional Similarity Space," *Current Computer Aided Drug Design*, 2010, Vol.6, pp. 290-296. (Data analysis, computer code, and manuscript checking)
23. Natarajan R., Jayalakshmi R., Vivekanandan M., **Natarajan G.,** "Sequence Comparison Using N-Dimensional Similarity Space", *Eighth Asia Pacific Bioinformatics Conference*, January 18-21, 2009, Bangalore, India. (Data analysis and computer code. Acceptance rate not available)

24. Natarajan, R., Jayalakshmi R., Vivekanandan M., **Natarajan G.,** Anbazhagan T. M., "DNA Sequence Descriptors based on Information Theory," *Fifth Indo-US workshop on mathematical chemistry with applications to the drug discovery, chemical risk assessment, bioinformatics, cheminformatics, computational biology and toxicology*, June 22-28, 2008, Duluth, Minnesota, USA. (Data analysis and computer code. Acceptance rate not available)
25. Natarajan R., Jayalakshmi R., Vivekanandan M., **Natarajan G.,** Anbazhagan T. M., "Intercorrelation of DNA Sequence Descriptors," *Fifth Indo-US workshop on mathematical chemistry with applications to the drug discovery, chemical risk assessment, bioinformatics, cheminformatics, computational biology and toxicology*, June 22-28, 2008, Duluth, Minnesota, USA. (Data analysis and computer code. Acceptance rate not available)
26. **Natarajan G.,** "Integrating Real-time Management of New Product Development Projects for Engineering Managers: A Case Study," *Proceedings of ASEM 28th Annual Conference*, Chattanooga, Tennessee, USA, November 7-10, 2007. (Single author paper. Acceptance rate not available)
27. Wyrick D, **Natarajan G.,** Eseonu C, Katmale H, Marturano D, Verma R., "Practicum in Engineering Management: Integrating Management Practice for EM Graduate Students and Traditional," *Proceedings of ASEM 28th Annual Conference*, Chattanooga, Tennessee, USA, November 7-10, 2007. (Part of the manuscript. Acceptance rate not available:)
28. Natarajan R., Jayalakshmi R., Vivekanandan M., **Natarajan G**., "Novel Invariants for the Characterization of DNA Sequences and their Applications*," National Conference on bioprospecting of marine resources with special reference to marine natural product and drug discovery*, April 26-28, 2007, Alagappa University, Karaikudi, India. (Data analysis and computer code. Acceptance rate not available)

C1.2. Papers currently under Peer Review

1. None

C1.3. Papers submitted in Preprint

1. **Natarajan G.,** Ashok A., "Multivariate Forecasting of Crude Oil Spot Prices using Neural Networks," 2018, *arXiv:1811.08963* (Idea, concept, statistical analysis, and manuscript preparation)

C1.4. Working Papers/Ideas

1. Measuring air quality data to quantify the contribution of Covid driven lockdowns in India.
2. Using Twitter Data along with Traditional Metrics to Forecast Gas Prices. Ideation stage. Aimed at publishing in International Journal of Forecasting.

C1.5. Books and Book Chapters

Advanced Operations Research. Coursepack for INDSTENG 4980 Operations Research II. Published by UW-Platteville.

C2. Professional Meetings, Symposia, and Conference

C2.1. Presentation to Professional Groups

1. **Natarajan G.,** Paider M., "An Immersive Application to Improve Engineering Economy Education." *Presentation at the ASEM 2021 virtual International Annual Conference,* October 2021. (Ideation and guidance. UG student project.)
2. **Natarajan G.,** Ashok A., "Utility vs User Rating: Recommendation Systems in Adverse Events." *Presentation at the ASEM 2020 virtual International Annual Conference,* October 2020. (Data Analysis and presentation)
3. **Natarajan G.,** Ng E., Schott E., and Keathley H., "Round Table Presentation Format: Lessons Learned and Application to Active Learning Pedagogies." *Proceedings of the ASEM 2020 International Annual Conference,* October 2020. (Data Analysis and Manuscript Preparation. Decision Pending. No acceptance rate available.)
4. Ng E., & **Natarajan G.,** "Extension or No Extension? A Study on the Value of Extending the Deadline for a Conference." *Proceedings of the ASEM 2019 International Annual Conference,* October 2019, Philadelphia, PA. (Data analysis and manuscript preparation. Acceptance rate: 76%)
5. Ashok A., **Natarajan G.,** & Elmasri R., "Using News Cycles to Explain Trends in Crude Oil Spot Prices." *Proceedings of the ASEM 2019 International Annual Conference,* October 2019, Philadelphia, PA. (Neural network design and manuscript preparation. Acceptance rate: 76%)
6. Ashok A., Natarajan G., & Elmasri R., "SIMSTER: A Clustering Approach to Extractive Summarization." *Poster presentation at NLDB 2019 Conference,* June 2019, Salford, Manchester, UK. (Statistical analysis and poster preparation. Acceptance rate: 28%)
7. Natarajan G., Ng E., "The Use of Composite Indices in Performance Measurement of Engineering and Management Systems." *Proceedings of the ASEM 2017 International Annual Conference,* October 2017, Huntsville, AL.
8. Natarajan G., Ashok, A., "Multivariate Analysis of Crude Oil Prices: An Exploratory Study." Presented at ASEM 2016 International Annual Conference, Charlotte, NC.
9. Natarajan G., Ashok A., "Methods and Variables used in Forecasting Fuel Prices: A Literature Review", *Proceedings of the 2016 Industrial and Systems Engineering Research Conference (ISERC),* May 2016, Anaheim, CA.
10. Natarajan G., Simo Kush T., McGinnis N., "What Users Want From ASEM? An Analysis of ASEM Web Traffic and Social Media Data." *Proceedings of the ASEM 2015 International Annual Conference,* October 7-10, 2015, Indianapolis, IN.
11. Natarajan G., Wyrick D.A., Ilseng J., "A Novel Approach to Measure Development in Complex Socio-Economic Systems: Application to the Development of SMEs." Accepted as a "presentation only" to ASEM 2015 International Annual Conference Proceedings. Work is in progress to update this research for submission to System Dynamics Review.
12. Natarajan G., Calvo-Amodio J., "A Dichotomous Holistic Product Costing Model for Re-shoring Operations," American Society for Engineering Management 2013 International Annual Conference, Minneapolis, Minnesota, USA, October 2-5, 2013.
13. Ng E., Natarajan G., Calvo-Amodio J., Simonton J., "When to Stop Beating a Dead Horse: Economics of Terminating a Failed Project," *Proceedings of the ASEM 2012 International Annual Conference*, Virginia Beach, Virginia, USA, October 17-20, 2012.
14. Natarajan R., Jayalakshmi R., Vivekanandan M., Natarajan G., Anbazhagan T. M., "Intercorrelation of DNA Sequence Descriptors," *Fifth Indo-US workshop on mathematical*

chemistry with applications to the drug discovery, chemical risk assessment, bioinformatics, cheminformatics, computational biology and toxicology, June 22-28, 2008, Duluth, Minnesota, USA.

15. Natarajan G., "Integrating Real-time Management of New Product Development Projects for Engineering Managers: A Case Study," *Proceedings of ASEM 28th Annual Conference*, Chattanooga, Tennessee, USA, November 7-10, 2007.

C2.2. Professional Workshops (offered by me)

- **Universal Design for Learning: Engagement in Online Learning**. Workshop offered as part of the Midwest Culturally Inclusive Conference (MCIC) series at UW-Platteville in March 2021.
- **Python for Machine Learning Applications.** Offered a two-part virtual workshop on invitation by the Department of Computer Science at Sri Sarada Niketan College for Women in India in December 2020.
- **Python in Bioinformatics.** Developed and offered a two-part virtual workshop on invitation by the Department of Bioinformatics at Bharathidasan University in India in November 2020.
- **Machine Learning Methods for Classification Tasks**. Developed a module for the new Internet of Things (IoT) program for the University of Wisconsin System in Summer 2020.
- **Universal Design for Learning (UDL) in Action**. UW Platteville TTC Faculty Associate for Summer 2020. Two-part workshop.
- **KEEN in Action: Applying the Jigsaw Method in a Single Class Period**. Workshop for the UW Platteville KEEN Teaching with Impact Symposia series in Spring 2020.
- **Avoiding Predatory Publishers**. Workshop/Colloquium for graduate students and young faculty at the American Society for Engineering Management 2018 International Annual Conference in October 2018.
- **Machine Learning Methods for Data Mining.** Workshop offered to graduate students at Oregon State University in 2017.

C3. Grants, Proposals, and Projects

C3.1. Funded Proposals

Agency	PI (and Co-PIs)	Title	Total Budget	My Share
UW-Platteville SAIF Grant	Gana Natarajan	Developing a Computer Application for Hands-On Immersive Learning	$4,000	$4,000
UW-Platteville College of EMS New Faculty Research Start-up: Phase 1	Gana Natarajan	Technology and Data Driven Approach to Improving Student Success	$2,500	$2,500

Ecampus Research Fellow (ECRF) Program	Gana Natarajan	Student Perception of Fairness in Ecampus Testing Methods. Jan 2018 – Mar 2019	$14,204	$14,204
		Totals	**$20,704**	**$20,704**

Team Member – Proposal that brought IBM Power 9 High Performance Computing Server to UW – Platteville campus.

C3.2. Pending and Declined Grants

Co-PI on Collaborative Research: FW-HTF-R: Technology-led Shift in Boundary of Work and the Effect on Well-Being and Productivity – Under Review

PI on CAREER: Student Success, Integration, and Attrition in Engineering Programs - Detection and Tailored Intervention using Learning Analytics – Not funded

PI on ERI: Improving Integration of Early Career Students in Engineering Programs through an App-based Education Framework – Not funded

Co-PI on Collaborative Research: FW-HTF-P: Emulating and Controlling the Effects of Peer Influence to Improve Worker Safety Behaviors in Food Service through Virtual Training. Submitted to NSF Future of Work at the Human Technology Frontier program – Not funded

PI on WiSys AppStart challenge proposal – Not funded

PI on UW-Platteville Provost Funding for New Faculty Start-up. – Not funded

Co-PI on Nevada DOT Project No.19Q2-E5-01 Traveler Expectations and Future Use of Highway Rest Areas in the Western United States. – Not funded

C3.3. Industry Projects

Cobham Mission Systems. In Spring 2021 I worked on a simulation project with Cobham Mission Systems in Davenport, IA. Under NDA.

Boeing Portland Project. In Fall 2016, I worked as an associate on a research project for Boeing Portland run by Dr. Javier Calvo (PI) of School of M.I.M.E. at Oregon State University. I was offered a course release for my work on data analysis and for providing theoretical perspectives for the data collected in the project up to that point.

C3.4. Fun Self-Motivated Projects

- **Facial Recognition** with VGG16 Architecture – Keras in Python
- **Digit Recognition** on MNIST dataset using Neural Networks – Tensorflow in Python
- **Digit Recognition** using Logistic Regression – Matlab
- **K-means clustering** with graphical output – Matlab
- **Text classification** on 20-Newsgroups dataset using Naïve-Bayes classifier – Python
- **Facial Recognition** on AT&T Faces dataset using SVM – Python
- **Dimension reduction** by LCA and PCA for the face recognition task above – Python

C3.5. Academic Projects

- **Technology Commercialization**. Developed business plan for a new venture
- **Life Cycle Assessment**. Performed LCA on Toyota Hybrid car battery.
- **Marketplace Simulation**. Global simulation game for manufacturing and marketing a product.
- **Technology Commercialization**. Suggested strategy for commercializing a patented technology.

D. Service, Awards, and Honor Societies

D1. University Service (UW – Platteville)

- University Academic Appeals Committee – since 2020
- University Improvement of Learning Committee – since 2021
- UWP TTC Faculty Associate for Universal Design for Learning – Summer 2020
- IE Scholarship Committee Member since Spring 2020
- College of EMS ABET Continuous Improvement Coordinator since Fall 2019
- IE coordinator search and screen committee – Fall 2019
- MEIE assessment committee member – 2019 - 2020
- IE program committee member – 2019 - 2020
- Co-organizer for the MEIE Assessment fair in Spring 2020
- IE web steward since Fall 2019
- Order of the Engineer ceremony planning committee
- College of EMS internship and co-op steering committee – 2019-2020
- WEMS Career Day presentation faculty advisor – Fall 2019
- Daily Academic Meeting (DAM) faculty presenter for prospective student recruitment since Fall 2019
- Member of the KEEN core group of faculty and staff since Fall 2019

D2. Service to the Profession

D2.1. Conference and Workshop Organization

- Director of International Annual Conference - American Society for Engineering Management, 2020 – 2023.
- Technical Program Co-Chair, ASEM 2021 International Annual Conference
- Technical Program Co-Chair, ASEM 2013 International Annual Conference
- Technical Program Committee Chair, ASEM 2011 International Annual Conference

D2.2. Conference Program Committees

- Track Chair – Project and Program Management Track – ASEM International Annual Conference since 2020
- Track Chair – Operations and Supply Chain Management Track - ASEM International Annual Conference 2019 - 2020
- Track Chair – General Engineering Management Track – ASEM International Annual Conference from 2013 - 2019
- Session Chair – ASEM International Annual Conference – various years

D2.3. Reviewer

- WiSys IGNITE Grant Reviewer – since 2020 (6 grant proposals reviewed)
- NSF Reviewer – 2017, 2018, 2020, and 2021
- Sustainability – reviewer since 2021 (3 reviews completed)
- Engineering Management Journal – reviewer since 2019 (3 reviews completed)

- IEEE Transactions on Engineering Management – reviewer since 2016 (1 review completed)
- Journal of Cleaner Production – reviewer since 2015 (14 reviews completed)
- Reviewed multiple papers since 2011 for ASEM International Annual Conference

D2.4. Other

- **Review of Excel Problems.** Reviewed and provided feedback on auto-graded Excel problems for Chan Park's *Fundamentals of Engineering Economics* (4th edition)
- **Exercise Problems.** Contributed exercise problems to Newnan, D., Eschenbach, T., Lavelle J., and Lewis, N. *Engineering Economic Analysis* (13th Edition)

D3. Service to the Public

D3.1. Professional

- **Director of International Annual Conference.** American Society for Engineering Management, 2020 – 2023.
- **Director of Professional Certification Exam Validation.** American Society for Engineering Management, 2019.
- **Director of Communications.** Served as the director of communications for American Society for Engineering Management two terms: 2015-2016, and 2012-2013.
- **Founding President.** Founded the American Society for Engineering Management – Texas Tech University student chapter in March 2010 and served as the chapter's first president.

D3.2. Other Public Service

- **Vice President Membership** of Greysolon Toastmasters–Duluth, MN from July 2013 to April 2014
- **Sergeant-at-arms** of Greysolon Toastmasters Club since October 2012
- **Vice President Membership and Public Relations** of Lubbock Professional Toastmasters from July 2012 to September 2012
- **Vice President Education** of Lubbock Toastmasters Club 884 from July 2012 to September 2012
- **Sergeant-at-arms** of Lubbock Toastmasters Club 884 from January 2012 to June 2012
- **President** of Lubbock Toastmasters Club 884 from January 2011 to December 2011

D4. Awards and Certificates

- **TTC Scholar for Equity-Minded SoTL.** Appointed as a TTC scholar for participation at the Wisconsin Faculty College in 2022.
- **ASEM Fellow.** Elected to the highest level of membership in the American Society for Engineering Management in 2021.
- **ASEM William Daughton World Headquarters Service Award.** Awarded for outstanding service in running the virtual conference in 2021.
- **NSF ENG CAREER Mock Panel Participant**. Picked for one of the three hundred spots available nationwide.

- **CenterPOINT Faculty Fellow** since 2020. Serving as the first faculty fellow with the College of EMS student success programs at UW-Platteville.
- **Distinguished Lecturer.** Awarded by IISE and Alpha Pi Mu student chapters of University of Wisconsin – Platteville, Fall 2019.
- **Certified Professional in Engineering Management (CPEM®).** Certified by American Society for Engineering Management since 2013
- **Six Sigma Green Belt.** Certified by Institute of Industrial Engineers in 2012.
- **Advanced Communicator – Silver** by Toastmasters International in February 2013
- **Advanced Communicator – Bronze** by Toastmasters International in May 2012
- **Meritorious Service Award.** American Society for Engineering Management meritorious service award for 2011.
- **Competent Communicator** by Toastmasters International in June 2011
- **Grand Market Master** in Marketplace Global Marketing Simulation game among six participating teams in Fall 2009
- **Outstanding Graduate Teaching Assistant** for 2008 from the Mechanical and Industrial Engineering department at the University of Minnesota Duluth

D5. Professional Societies

- Institute for Operations Research and the Management Sciences (INFORMS)
- American Society for Engineering Management (ASEM)
- Institute of Industrial and Systems Engineers (IISE)
- American Society for Engineering Education (ASEE)
- International Association of Engineers (IAEng)

D6. Honor Societies

- Full Member of **Sigma Xi** (The Scientific Research Society) in October 2015
- Charter member of **Epsilon Mu Eta** (Engineering Management Honor Society) Texas Tech Chapter in May 2012
- Inducted into **Tau Beta Pi** (National Engineering Honor Society) in May 2011
- Inducted into **Alpha Pi Mu** (National Industrial Engineering Honor Society) in June 2010