JITESH H. PANCHAL

Associate Professor
School of Mechanical Engineering
Purdue University, West Lafayette, IN

Contact Information

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Education

Degree: **Doctor of Philosophy**, Mechanical Engineering, Georgia Institute of Technology
Major: Computer Aided Engineering and Design
Minor: Engineering Mathematics
PhD Dissertation Title: "A Framework for Simulation-Based Integrated Design of Multiscale Products and Design Processes"
Completed: **December 2005**
Advisors: Dr. Farrokh Mistree and Dr. Chris Paredis

Degree: **Master of Science**, Mechanical Engineering, Georgia Institute of Technology
Major: Computer Aided Engineering and Design
MS Thesis Title: "Towards a Design Support System for Distributed Product Realization"
Completed: **May 2003**
Advisors: Dr. Farrokh Mistree and Dr. Janet Allen

Degree: **Bachelor of Technology**, Indian Institute of Technology (IIT), Guwahati
Major: Mechanical Engineering
B. Tech. Project Title: "Optimization of Turning Process using a Neuro-Fuzzy Controller"
Completed: **May 2000**

Academic Appointments

Associate Professor, August 2015 – Present
School of Mechanical Engineering, Purdue University, West Lafayette, IN

Assistant Professor, August 2012 – August 2015
School of Mechanical Engineering, Purdue University, West Lafayette, IN

Assistant Professor, August 2008 – August 2012
School of Mechanical and Materials Engineering, Washington State University, Pullman, WA

Visiting Assistant Professor, January 2006 – August 2008
Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Savannah, GA

Other Appointments as a Graduate Student

Graduate Research Assistant, August 2001 – December 2005
Systems Realization Laboratory, Georgia Institute of Technology, Atlanta, GA

Woodruff School Doctoral Teaching Fellow, Spring 2005
The G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta

Teaching Associate, Spring 2004
The G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta

Doctoral Teaching Practicum Participant, Spring 2004
The G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta

Industrial Experience

Research Analyst, May 2004 – Aug 2004
Collaborative Product Development Associates (CPDA), New York, USA
Mentor: Donald H. Brown (Managing Partner, Collaborative Product Development Associates)

Software Engineer, July 2000 – June 2001
Interra Information Technologies, Noida, India

Summer Intern, May 1999 – July 1999
Hindustan Lever Limited, Haldia, India

Research Grants

Defense Advanced Research Projects Agency (DARPA)
Title: Learning to Gamebreak (L2G)
Duration: May 2020 – January 2021
Amount: $397,489
Role: Co-Principal Investigator (Funding share: $118,644 for Phase 1)
Collaborators: Dan DeLaurentis (PI), Ali Raz

Systems Engineering Research Center (SERC)
Title: Cognitive Bias in Intelligent Systems
Duration: July 2019 – September 2020
Amount: $300,000
Role: Co-Principal Investigator (Funding share: $149,550)
Collaborators: Laura Freeman (Virginia Tech)

NSF Engineering Design and Systems Engineering (EDSE) Grant
Title: Workshop and Grantees Meeting: Positioning Engineering Design and Systems Engineering Research for Sustained Societal Impact; West Lafayette, Indiana; October 7-8, 2019
Duration: August 2019 – July 2020

Amount: $49,998
Role: Principal Investigator
Collaborators: Ilias Bilionis, Tahira Reid, Karthik Ramani
URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1916088

NSF Engineering Design and Systems Engineering (EDSE) Grant

Title: EAGER: Demonstrating the Importance of Research Setting Representativeness in Systems Engineering and Design Research
Duration: September 2018 – August 2020
Amount: $58,266
Role: Co-PI
Collaborators: Zoe Szajnfarber (GWU), Erica Gralla (GWU), Paul Grogan (Stevens Inst. of Tech.)
URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1841062

NSF Cyber-Physical Systems (CPS)

Title: NSF Workshop on State-of-the-Art and Challenges in Resilience
Duration: October 2018 – September 2019
Amount: $49,500
Role: Co-PI
Collaborators: Saurabh Bagchi (PI), Gesualdo Scutari, Felix Xiaozhu Lin, Milind Kulkarni
URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1845192

NSF Systems Science (SYS) Grant

Title: A theoretical framework for understanding strategic behavior in systems engineering
Duration: August 2017 – July 2021
Amount: $502,945
Role: Co-PI
Collaborators: Ilias Bilionis (PI), Thanh Nguyen
URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1728165

NSF Systems Science (SYS) Grant

Title: Understanding Information Acquisition Decisions in Systems Design through Behavioral Experiments and Bayesian Analysis
Duration: August 2017 – July 2021
Amount: $649,876
Role: Principal Investigator
Collaborators: Ilias Bilionis, Sebastien Helie, and Karthik N. Kannan
URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1662230

Naval Postgraduate School

Title: Computing without Revealing: A Cryptographic Approach to eProcurement
Duration: December 2016 – July 2018
Amount: $120,000
Role: Principal Investigator (Funding share: $60,000)
Collaborator: Mikhail Atallah

Tata Consultancy Services (TCS) Grant

Title: Decision-based Collaborative Design Workflow Management for PREMAP
Duration: July 2015 – June 2018
Amount: $443,798
Role: Principal Investigator (Funding share: $167,000)
Collaborators: Farrokh Mistree and Janet K. Allen (University of Oklahoma)

NSF Systems Science (SYS) Grant

Title: Decision-centric foundations for modeling and analysis of complex networked systems
Duration: September 2014 – August 2018
Amount: $425,466
Role: Principal Investigator (Funding share: $245,346)
Collaborators: Daniel A. DeLaurentis
URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1360361

NSF Engineering Systems Design (ESD) Grant

Title: Crowdsourcing for Engineering Systems Design: Theoretical and Experimental Studies
Duration: July 2014 – June 2018
Amount: $400,580
Role: Principal Investigator (Funding share: $315,850)
Collaborators: Karthik N. Kannan
URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1400050

NSF Cyber Physical Systems (CPS) Grant

Title: Foundations of Cyber-Physical Infrastructure for Creative Design and Making of Cyber-physical Products
Duration: September 2013 – August 2018
Amount: $1,075,000
Role: Principal Investigator (Funding share: $340,000)
Collaborators: Mikhail Atallah and Karthik Ramani
URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1329979

NSF Engineering Design and Innovation (EDI) Grant

Title: Integrated Policy and Engineering Design for Complex Systems with Applications to Distribution Systems within Smart Electric Grid
Duration: August 2012 – April 2017
Amount: $350,000
Role: Principal Investigator (Funding share: $200,000)
Collaborator: Anurag K. Srivastava (Washington State University)
URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1261860

NSF EAGER Grant

Title: Managing Uncertainty by Integrating Information Economics and Robust Design
Duration: August 2010 – July 2011
Amount: $79,817
Role: Co-Principal Investigator (Funding share: $39,818)
Collaborator: Farrokh Mistree, PI (University of Oklahoma)
URL: http://nsf.gov/awardsearch/showAward?AWD_ID=1042350

NSF CAREER Award

Title: Collective Innovation - Transforming the Realization of Complex Engineering Systems
Duration: April 2010 – March 2016
Amount: $400,000
Role: Principal Investigator (single investigator grant)
URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1265622

PLM Center of Excellence Grant

Title: Community-based Product Lifecycle Management (c-PLM) – Bridging the gap between PLM and social innovation
Duration: January 2013 – December 2013
Amount: $30,000
Role: Principal Investigator (Funding share: $15,000)
Collaborator: Karthik Ramani

Procter and Gamble Fund's Higher Education Grant

Title: Collective Innovation in Product Development: A Web-Based Platform for Educating Next Generation Engineers
Duration: January 2009 – January 2010
Amount: $10,000
Role: Principal Investigator (single investigator grant)

Awards and Honors

1. **Guest Associate Editor Award** (2019), ASME Journal of Mechanical Design (JMD).
2. Named one of the **Most Impactful Faculty Inventors** in Fiscal Year 2019 by Purdue Engineering and Office of Technology Commercialization.
3. **Ruth and Joel Spira Award** (2018), School of Mechanical Engineering at Purdue University.
4. **B.F.S. Schaefer Outstanding Young Faculty Scholar Award** (2017-2019), School of Mechanical Engineering at Purdue University.
5. **NSF CAREER Award**, April 2010 – March 2016.
6. **Best paper award** at the ASME iDETC conference for:
   Shergadwala, M., Kannan K., and Panchal J. H., 2016, "Understanding the Impact of Expertise on the Design Quality: An Approach based on Concept Inventories and Item Response Theory," *ASME 2016 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference* (IDETC/CIE 2016), Charlotte, NC, USA, August 21-24, 2016. Paper Number: DETC2016-59038.
7. **Robert E. Fulton SEIKM Best Paper Award** at the ASME CIE conference, 2013 for:
   Sha, Z., and Panchal, J.H., 2013, "Estimating the Node-Level Behaviors in Complex Networks from Structural Datasets," *2013 ASME International Design Engineering Technical Conferences (I-DETC) and Computers and Information in Engineering (CIE) Conference*, Portland, OR. Paper Number: DETC2013-12063.
8. **Reid Miller Outstanding Teaching Faculty Award** by the College of Engineering and Architecture (CEA), 2012, Washington State University, Pullman, WA.
9. **Teaching Excellence Award**, two consecutive years (2011 and 2012), School of Mechanical and Materials Engineering, Washington State University, Pullman, WA.
10. **Young Engineer Award**, 2010, ASME Computers and Information in Engineering Division.
11. **Robert E. Fulton EIM Best Paper Award** at the ASME CIE conference, 2004 for:

Panchal, J.H., Fernández, M.G., Paredis, C.J.J., Allen, J.K., and Mistree, F., Designing Design Processes in Product Lifecycle Management: Research Issues and Strategies. in *ASME 2004 Design Engineering Technical Conferences and Computer and Information in Engineering Conference*, 2004, Salt Lake City, Utah. Paper No. DETC2004/CIE-57742.

12. **NSF/ASME Essay Competition Winner** at ASME DETC conference, 2004
13. **Woodruff School Doctoral Teaching Fellowship**, 2005, Georgia Institute of Technology.
14. **University Silver Medal** for the years 1996-2000 for being the top undergraduate student in Mechanical Engineering department at Indian Institute of Technology (IIT), Guwahati.

Courses Taught

PURDUE UNIVERSITY

Undergraduate

ME 352 – Machine Design I (Spring 2015, Fall 2015, Spring 2016, Spring 2017, Spring 2018, Spring 2019, Summer 2019)
ME 452 – Machine Design II (Fall 2016, Fall 2012, Spring 2013, Fall 2013, Fall 2016, Fall 2018)
ME 463 – Engineering Design (Spring 2014, Spring 2020)

Graduate

*ME597 – Decision Making for Engineering Systems Design (Fall 2014, Fall 2017, Fall 2019)
*ME697 – Topics in Engineering Design Science (Spring 2016)

WASHINGTON STATE UNIVERSITY

Graduate

*ME503 - Systems-based Design Approaches for Sustainability
ME575 – Geometric Modeling

Undergraduate

ME310 – Manufacturing Processes
ME311 – Manufacturing Processes Lab
ME348 – System Dynamics
ME414 – Machine Design

GEORGIA INSTITUTE OF TECHNOLOGY

Graduate

ME6101 – Engineering Design
ME6102 – Designing Open Engineering Systems

Undergraduate

ME3180 – Machine Design
ME4041 – Interactive Computer Graphics and Computer-Aided Design
*ME4813 – Rapid Product Development for a Global Economy
*ME4903 – Information Engineering for Systems Realization

** New courses developed by Jitesh H. Panchal*

Students Advised/In-progress

IN PROGRESS

PhD

1. *Murtuza Shergadwala* (2014 - present): Crowdsourcing in Engineering Systems Design
2. *Adam Dachowicz* (2015-present): Microstructure-based Fingerprinting of Metal Parts
3. *Sharmila Karumuri* (2016 - present): Deep Neural Networks for Physics Simulation and Design
4. *Ashish Chaudhari* (2017-present)*:* Information Acquisition Decisions in Engineering Design
5. *Atharva Hans* (2019-present): To be decided
6. *Karim AlSayeed* (2020-present): To be decided

COMPLETED

PhD

1. *Piyush Pandita* (2019): Bayesian Optimal Design of Experiments for Expensive Black-Box Functions under Uncertainty (co-advised with Ilias Bilionis)
2. *Siva Chaduvula* (2019): Secure Co-Design: Confidentiality Preservation in Online Engineering Collaborations (co-advised with Mikhail Atallah, CS).
3. *Joseph D Thekinen* (2018): Analysis & Design of Mechanisms for Complex Systems.
4. *Zhenghui Sha* (2015): Decision-centric Foundations for Complex Systems Engineering and Design (Purdue University, ME). Recipient of 2017 **Best Dissertation Award** from the ASME Computers and Information in Engineering (CIE) division.
5. *Ahmad Taha* (2015): Secure Estimation, Control and Optimization of Uncertain CPSs with Applications to Power Systems (Purdue University, ECE, co-advised by Oleg Wasynczuk)
6. *Qize Le* (2012): Analysis and Modeling of the Product Structure and Community Structure in Open Source Processes (Washington State University)

MS Thesis

1. *Vikranth Kattukuri* (2017-2019): Failures in Spacecraft Systems: An Analysis From the Perspective of Decision Making (Purdue University, ME)
2. *Ashish Chaudhari* (2015-2017): Crowdsourcing for Engineering Design: Theoretical and Experimental Studies (Purdue University, ME)
3. *Parth Paritosh* (2015-2017): Gaussian Process Dynamical Models for Designing Multi-stage Manufacturing Processes (co-advised with Ilias Bilionis; Purdue University, ME)
4. *Naman Mandhan* (2014-2016): A Decentralized 3D Printing Framework Based on Gale Shapley Matching (Purdue University, ME)
5. *Sainath Varikuti* (2013-2014): A Web-based Online Collaboration Platform for Formulating Engineering Design Projects (Purdue University, ME)
6. *Bryant Hawthorne* (2010 - 2012): Towards Feed-In-Tariff Policy Design Considering Multiple Objectives and Incomplete Preferences (Washington State University)
7. *Yiwen Liu* (2010 - 2011): Evaluating the Technical, Economic, and Environmental Impact of the Level of Decentralization in Energy Investment Decisions (Washington State University)
8. *Marc Somers* (2011-2011): Collective Innovation Ecosystem for Design Courses (Washington State University)
9. *HaoYun Huang* (2008 – 2010): Analysis of the Structure and Evolution of an Open-Source Community (Washington State University)

BS (Research Projects)

1. *Murtuza Shergadala*, May – July 2013, Adaptive and innovative design interface technology.
2. *Nadim Hachem*, May 2013 – July 2013, Optimal power flow modeling for smart-grids.
3. *Yuxing Zhang*, August 2013 – December 2013, Stress visualization in beams and shafts.

4. *Stephanie Pitts* (Spring 2009 - Fall 2009): Creation of a Sealing Subspace within the Collective Innovation Framework (Washington State University)

Professional Activities

Invited Talks and Workshops

1. Invited Seminar at the Department of Industrial Design, *University of Liverpool*. November 22, 2018.
2. Invited Seminar at the Department of Engineering Management and Systems Engineering, *George Washington University*. October 11, 2018.
3. Invited Lecture for the *Distinguished Lecture Series* on "Frontier Issues in Collective Innovation", Beijing Institute of Technology. June 11, 2018.
4. Invited Plenary talk at the 4th World Congress on Integrated Computational Materials Engineering (ICME 2017). May 24th, 2017.
5. Invited Seminar at the School for Engineering of Matter, Transport and Energy, *Arizona State University*. March 31, 2017.
6. Invited Seminar at the Center for Advanced Vehicular Systems (CAVS), *Mississippi State University*. February 14, 2017.
7. Invited Seminar in the Department of Mechanical and Industrial Engineering (MIE) at *University of Illinois at Chicago (UIC)*. October 11, 2016.
8. Invited talk at the International Symposium on *Digital Platforms for Decision based Design of Complex Engineered Systems*, June 21-22, 2016, Beijing, China.
9. Invited to National Science Foundation Workshop on *Theoretical Foundations of Systems Engineering*. February 8-12, 2016.
10. Invited to National Science Foundation Workshop on *Research Challenges in Modeling & Simulation for Engineering Complex Systems*. January 13-14, 2016.
11. Keynote speaker at the Indian Institute of Metals (IIM)-TMS Symposium on *ICME for Steel: Handshakes for Industrial Adoption*, Coimbatore, India. November 15, 2015.
12. Invited Seminar in the Department of Mechanical Engineering at *Indiana University-Purdue University Indianapolis (IUPUI)*. December 03, 2015.
13. Invited speaker for NSF sponsored *CAREER proposal writing workshop*, held at the ASME IDETC/CIE conference, Boston, MA. August 04, 2015.
14. Invited to National Science Foundation Workshop on the *Theory of Systems Engineering*, Arlington, VA. November 12-14, 2014.
15. Invited member of US delegation for Indo-US Workshop on *ICME for Integrated Realization of Engineered Materials and Products*, Pune, India. December 18-21, 2013.
16. 2-day workshop (with Farrokh Mistree) on *Engineering Education for the 21st Century*, College of Engineering, Pune, India. May 17-18, 2013.
17. Invited talk at *Technical Architects Conference (TACTICS)*, Tata Consulting Services, Pune, India. January 03, 2013.

Professional Service

1. *Associate Editor*, ASME Journal of Mechanical Design (January 2020-present).
2. *Lead organizer*, NSF Engineering Design and Systems Engineering (EDSE) workshop and grantees meeting, Purdue University, October 7-8, 2019. https://engineering.purdue.edu/ME/EDSE
3. *Co-editor of Special Issue* on "Highlights from ASME CIE 2018", ASME Journal of Computing and Information Science in Engineering (2019).
4. *Co-organizer*, NSF workshop on Grand Challenges in Resilience, Purdue University, March 20-21, 2019.

5. *Guest Editor of Special Issue* on "Machine Learning for Engineering Design", ASME Journal of Mechanical Design (2019).
6. *Associate Editor*, ASME Journal of Computing and Information Science in Engineering (2016-2019).
7. *Editor of Special Issue* on "Highlights from ASME CIE 2017", ASME Journal of Computing and Information Science in Engineering (2018). Editorial: https://doi.org/10.1115/1.4040307
8. *Guest Editor*, Design Science Journal, for the Thematic Collection - Network-based Modeling and Analysis in Design (2016-17).
9. *Program Chair*, ASME Computers and Information in Engineering (CIE) conference (2019).
10. *Vice Chair*, Executive Committee of the ASME Computers and Information in Engineering (CIE) division (2018-19).
11. *Chair*, ASME Design Education Conference Executive Committee. (2016-2018).
12. *Secretary*, Executive Committee of the ASME Computers and Information in Engineering (CIE) division (2017-18).
13. *Member at Large*, Executive Committee of the ASME Computers and Information in Engineering (CIE) division (2016-17).
14. *Co-organizer*, International Symposium on Digital Platforms for Decision Based Design of Complex Engineered Systems, Beijing Institute of Technology, Beijing, China. June 21-23, 2016.
15. *Vice Chair*, ASME Design Education Conference Executive Committee. (2014-2016).
16. *Review co-coordinator,* Decision making in engineering design, 42nd Design Automation Conference (DAC), 2016.
17. *Review coordinator*, Decision making in engineering design, 41st Design Automation Conference (DAC), 2015.
18. *Conference Chair*, ASME 10th International Conference on Design Education (DEC) (2013-2014)
19. *Track organizer*, Engineering Science in Education, Society of Engineering Science (SES) 2014 Technical Meeting.
20. *Past Chair and Awards committee chair*, ASME CIE *Computer Aided Product and Process Design* (CAPPD) Technical Committee (2013-2014)
21. *Program Chair*, ASME 10th International Conference on Design Education (DEC) (2012-2013)
22. *Panel organizer*, Educating the Faculty of the Future, DEC-2-2, at the 2013 Design Education Conference (DEC) at the ASME iDETC conference
23. *Chair*, ASME CIE *Computer Aided Product and Process Design* Technical Committee (2012-2013)
24. *Vice-chair*, ASME CIE *Computer Aided Product and Process Design* Technical Committee (2011-2012)
25. *Secretary*, ASME CIE *Computer Aided Product and Process Design* Technical Committee (2010-2011)
26. *Review coordinator*, "Systems Engineering," CIE-26 at 2011 CIE Conference
27. *Session Chair*, "Design Process Modeling," CIE-9-4 at 2010 CIE Conference
28. *Review coordinator*, "Conceptual Design Methods," DAC-3 at 2010 DAC Conference
29. *Co-organizer*, "Network Centric Product Realization," Special session at 2009 CIE Conference
30. *Review coordinator*, "Feature-Based Design and Recognition," CIE-1-2 at 2009 CIE Conference
31. *Co-organizer*, "Mass Collaborative Product Realization," Workshop at 2008 ASME CIE Conference

Reviewer

1. *Reviewer*, Journal of Mechanical Design
2. *Reviewer*, Computer Aided Design
3. *Reviewer*, Research in Engineering Design
4. *Reviewer*, Journal of Engineering Design
5. *Reviewer*, Journal of Networks and Spatial Economics
6. *Reviewer*, Engineering Optimization
7. *Reviewer*, IEEE System, Man and Cybernetics – Part a

8. *Reviewer*, Networks and Spatial Economics
9. *Reviewer*, Journal for Computing and Information Science in Engineering
10. *Reviewer*, Concurrent Engineering - Research and Applications
11. *Reviewer*, ASME Design Automation Conference
12. *Reviewer*, ASME Computers and Information in Engineering Conference
13. *Book proposal reviewer*, for two books for Springer in 2012

School-Level Service Activities

1. Member of "Convergent Innovation" Faculty Search Committee (chaired by K. Ramani), Fall 2019 – Spring 2020.
2. Member of the Fellowship Committee (chaired by T. Meyer), Fall 2018 – present.
3. Member of ABET Committee (chaired by C. Wassgren), Summer 2017 - Fall 2019.
4. Member of the Undergraduate Curriculum Committee (chaired by Jim Jones), Fall 2017-present.
5. Member of Graduate Admissions Committee (chaired by F. Sadeghi), Fall 2015 - Summer 2018.
6. Member of Manufacturing Facilities Planning committee (chaired by Y. Shin), Spring 2015.
7. Member of School Impact and Reputation committee (chaired by I. Mudawar), Fall 2014.
8. Member of the Graduate Studies Committee, School of Mechanical Engineering, Purdue University. Fall 2014 – Summer 2015.
9. Member of the graduate studies committee, undergraduate studies committee and the laboratory and computing committee, Mechanical and Materials Engineering, Washington State University, August 2008-present.
10. IT committee member at Georgia Tech, Savannah, January 2006 – December 2006.
11. Member, Program Committee, Woodruff School Savannah. Developed a web-based tool for ABET 2008 assessment.

Professional Affiliations

1. Member, American Society of Mechanical Engineers (ASME)
2. Member, Design Society
3. Member, Society for Judgment and Decision Making

List of Publications

Books

B1. McDowell, D. L., Panchal, J. H., Choi, H.-J., Seepersad, C. C., Allen, J. K., and Mistree, F., 2009, *Integrated Design of Multiscale, Multifunctional Materials and Products*, Elsevier. ISBN: 9781856176620. http://www.amazon.com/Integrated-Multiscale-Multifunctional-Materials-Products/dp/1856176622/ref=sr_1_1?ie=UTF8&s=books&qid=1300980247&sr=8-1

B2. Fujimoto, R., Bock. C., Chen, W., Page, E., and Panchal, J.H. (Editors), 2017, *Research Challenges in Modeling and Simulation for Engineering Complex Systems*, Springer. ISBN: 978-3-319-58543-7. http://www.springer.com/us/book/9783319585437

B3. Rezapour, S., Khosrojerdi, A., Rasoulifar, G., Allen, J.K., Panchal, J. H., Srinivasan, R.S., Tew, J.D., and Mistree, F., 2018, *Architecting Fail-Safe Supply Networks*, CRC Press. ISBN: 978-1138504264. https://www.amazon.com/Architecting-Fail-Safe-Supply-Networks-ebook/dp/B07HGG28P6/ref=sr_1_3?ie=UTF8&qid=1540907389&sr=8-3

Book Chapters

BC1. Sha, Z., and Panchal, J.H., in press, "A Decision-Centric Framework for Modeling Evolutionary Complex Systems," *Advances in Computers and Information in Engineering Research*, ACIER Book Series Vol. 2, ASME Press.

BC2. Chen, W., Kesidis, G., Morrison, T., Oden, J.T., Panchal, J.H., Paredis, C., Pennock, M., Atamturktur, S., Terejanu, G., Yukish, M., 2017, "Uncertainty in Modeling and Simulation," *Research Challenges in Modeling and Simulation for Engineering Complex Systems, Springer*, pp. 75-86. ISBN: 978-3-319-58543-7.

BC3. Shukla, R., Anapagaddi, R., Singh, A.K., Allen, J.K., Panchal, J.H. and Mistree, F., 2016, "Integrated Computational Materials Engineering for Determining Set Points of Unit Operations for Production of a Steel Product Mix," *Computational Approaches to Materials Design Theoretical and Practical Aspects* (Eds. S. Datta and J.P. Davim), Hershey, PA, Chapter 6, IGI Publishers, pp. 163-191. DOI: 10.4018/978-1-5225-0290-6.ch006

BC4. Panchal, J. H. and Le, Q., 2014, "Product Development by Self-Organized Virtual Communities," *Advances in Computers and Information in Engineering Research*, (Editors: Michopoulos, J., Rosen, D., Paredis, C.J.J., and Vance, J.), Chapter 7. ASME press, pp. 155-182. ISBN: 978-0791860328.

BC5. Yanamandram, V.M.K. and Panchal, J. H., 2014, "Evaluating the Level of Openness in Open Source Hardware," *Product Development in the Socio-sphere: Game Changing Paradigms for 21st Century Breakthrough Product Development and Innovation*, (Editor: Schaefer, D.), Chapter 6, Springer, pp. 99-120. DOI: 10.1007/978-3-319-07404-7.

BC6. Mistree, F., Panchal, J. H., Schaefer, D., Allen, J. K., Haroon, S., Siddique, Z., 2014, "Personalized Engineering Education for the 21st Century," *Curriculum Models for the 21st Century: Using Learning Technologies in Higher Education*, (Editors: Gosper, M. and Ifenthaler, D.), Chapter 6, Springer Science+Business Media, New York, pp. 91-111. ISBN: 978-1-4614-7365-7. DOI: 10.1007/978-1-4614-7366-4_6.

BC7. Mistree, F., Panchal, J.H., and Schaefer, D., 2012, "Mass-Customization: From Personalized Products to Personalized Engineering Education," *Supply Chain Management*, InTech Publishing, pp. 149-173. ISBN: 978-953-51-0367-7.

BC8. Pezeshki C, Panchal J. H., and Ameta G., 2011, "The Need for Teaching Ecodesign and Sustainability to University Students – Blueprints for Success," *Handbook of Sustainable Engineering* (Editors: W. Wimmer and J. Kauffman), Springer. ISBN: 978-1-4020-8939-8.

BC9. Chen, K., Bankston, J., Panchal, J. H., and Schaefer, D., 2009, "A Framework for the Integrated Design of Mechatronic Systems", *Collaborative Design and Planning for Digital Manufacturing*, (Editors: L. Wang and A. Nee), Springer, pp. 37-70.

BC10. Panchal, J. H., Fernández, M. G., Paredis, C. J. J., Allen, J. K., and Mistree, F., 2007, "Leveraging Design Process Related Intellectual Capital – A Key to Enhancing Enterprise Agility," *Collaborative Product Design & Manufacturing Methodologies and Applications* (Editors: W. Li, S. Ong, C. McMahon and A. Nee), Springer-Verlag, pp. 211-244.

BC11. Panchal, J. H., Choi, H.-J., Allen, J. K., Rosen, D., and Mistree, F., 2007, "An Adaptable Service-based Framework for Distributed Product Realization," *Collaborative Product Design & Manufacturing Methodologies and Applications* (W. Li, S. Ong, C. McMahon and A. Nee, Eds.), Springer-Verlag, pp. 1-37.

Journal Papers

J1. Salar, S., Bilionis, I., and Panchal, J.H., 2020, "Modeling the System Acquisition Using Deep Reinforcement Learning," *IEEE Access*, in press.

J2. Dachowicz, A., Atallah, M., and Panchal, J.H., 2020, "Extraction and Analysis of Spatial Correlation Micrograph Features for Traceability in Manufacturing," *ASME Journal of Computing and Information Science in Engineering*, in press.

J3. Chaudhari, A., Bilionis, I., and Panchal, J.H., 2020, "Descriptive Models of Sequential Decisions in Engineering Design: An Experimental Study," *ASME Journal of Mechanical Design*, Vol. 142, No. 8, 081704. DOI: 10.1115/1.4045605.

J4. Shergadwala, M., Forbes, H., Schaefer, D., Panchal, J.H., 2020, "Challenges and Research Directions in Crowdsourcing for Engineering Design: An Interview Study with Industry Professionals," *IEEE Transactions on Engineering Management*, in press.

J5. Szajnfarber, Z., Grogan, P.T., Panchal, J.H., and Gralla, E.M., 2020, "A Call for Consensus on the Use of Representative Model Worlds in Systems Engineering and Design", *Systems Engineering*, in press.

J6. Bao, Y., Ming, Z., Panchal, J.H., Wang, G., and Yan, Y., 2020, "A Reusable and Executable Information Model of Experiments on Human Decision Making in Systems Engineering and Design", *IEEE Access*, in press.

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Refereed Conference Papers

C1. Hans, A., Chaudhari, A. M., Bilionis, I., and Panchal, J.H., 2020, "Quantifying Individuals' Theory-based Knowledge using Probabilistic Causal Graphs: A Bayesian Hierarchical Approach," *ASME 2020 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference* (IDETC/CIE 2020), Saint Louis, MO, August 16-19, 2020. Paper Number: IDETC2020-22613.

C2. Shergadwala, M., and Panchal, J.H., 2020, "Human Inductive Biases in Design Decision Making," *ASME 2020 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference* (IDETC/CIE 2020), Saint Louis, MO, August 16-19, 2020. Paper Number: IDETC2020-22252.

C3. Forbes, H., Schaefer, D., Shergadwala, M., and Panchal, J.H., 2020, "Investigating the Challenges of Crowdsourcing for Engineering Design: An Interview Study with Organizations of Different Sizes," *ASME 2020 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference* (IDETC/CIE 2020), Saint Louis, MO, August 16-19, 2020. Paper Number: IDETC2020-22466.

C4. Shergadwala, M., and Panchal, J.H., 2020, "Sequential Design Decision Making Under the Influence of Competition: A Protocol Analysis," *ASME 2020 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference* (IDETC/CIE 2020), Saint Louis, MO, August 16-19, 2020. Paper Number: IDETC2020-22254.

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