

JITESH H. PANCHAL*Assistant 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**; GPA: 4.0/4.0
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**; GPA: 4.0/4.0
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**; GPA: 9.0/10, Class Rank: 1

Academic Appointments

Assistant Professor, August 2012 – Present
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
The G.W. 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

Awards and Honors

1. **NSF CAREER Award**, April 2010 – March 2015.
2. **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.
3. **Reid Miller Outstanding Teaching Faculty Award** by the College of Engineering and Architecture (CEA), 2012, Washington State University, Pullman, WA.
4. **Teaching Excellence Award**, two consecutive years (2011 and 2012), School of Mechanical and Materials Engineering, Washington State University, Pullman, WA.
5. **Young Engineer Award**, 2010, ASME Computers and Information in Engineering Division.
6. **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.
7. **NSF/ASME Essay Competition Winner** at ASME DETC conference, 2004
8. **Woodruff School Doctoral Teaching Fellowship**, 2005, Georgia Institute of Technology.

9. **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.
10. **Merit Cum Means Scholarship** for 1996-2000 at IIT Guwahati for academic performance

Research Grants

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 2017

Amount: \$1,000,000

Role: Principal Investigator (Funding share: \$340,000)

Collaborators: Mikhail Atallah and Karthik Ramani

URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1329979

NSF Grant

Title: Integrated Policy and Engineering Design for Complex Systems with Applications to Distribution Systems within Smart Electric Grid

Duration: August 2012 – July 2015

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=1201114

NSF CAREER Award

Title: Collective Innovation - Transforming the Realization of Complex Engineering Systems

Duration: April 2010 – March 2015

Amount: \$400,000

Role: Principal Investigator (single investigator grant)

URL: http://www.nsf.gov/awardsearch/showAward?AWD_ID=0954447

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

NSF EAGER Grant

Title: Managing Uncertainty by Integrating Information Economics and Robust Design

Duration: August 2010 – July 2011

Amount: \$39,818

Role: Principal Investigator (Funding share: \$39,818)

Collaborator: Farrokh Mistree (University of Oklahoma)

URL: http://nsf.gov/awardsearch/showAward?AWD_ID=1042350

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 2008 – January 2009

Amount: \$10,000

Role: Principal Investigator (single investigator grant)

Courses Taught**PURDUE UNIVERSITY****Undergraduate Level**

ME 452 – Machine Design II (Fall 2012, Spring 2013, Fall 2013)

WASHINGTON STATE UNIVERSITY**Graduate Level**

*ME503 - Systems-based Design Approaches for Sustainability

ME575 – Geometric Modeling

Undergraduate Level

ME310 – Manufacturing Processes

ME311 – Manufacturing Processes Lab

ME348 – System Dynamics

ME414 – Machine Design

GEORGIA INSTITUTE OF TECHNOLOGY**Graduate Level**

ME6101 – Engineering Design

ME6102 – Designing Open Engineering Systems

Undergraduate Level

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**PURDUE UNIVERSITY****PhD**

- *Zhenghui Sha* (2010 - present): Design of Complex Endogenous Networks (Purdue University, ME)
- *Ahmad Taha* (2013 - present): Policy Design for Distributed Energy Systems (Purdue University, ECE, co-advised by Oleg Wasynczuk)
- *Siddharth Bhandari* (2013 - present): Game-Theoretic Analysis of Participation in Crowdsourcing based Product Development (Purdue University, ME)

MS Thesis

- *Mahesh Yanamandram* (2013-present): Open source hardware development (Purdue University, ME)
- *Sainath Varikuti* (2013-present): Collaborative framework for senior design projects (Purdue University, ME)
- *Pramod Kumar* (2013-present): Real time design guidance considering system behavior (Purdue University, ME, co-advised with Karthik Ramani)

WASHINGTON STATE UNIVERSITY**PhD**

- *Qize Le* (2008 - 2012): Analysis and Modeling of the Product Structure and Community Structure in Open Source Processes (Washington State University)

MS Thesis

- *Bryant Hawthorne* (2010 - 2012): Towards Feed-In-Tariff Policy Design Considering Multiple Objectives and Incomplete Preferences
- *Yiwen Liu* (2010 - 2011): Evaluating the Technical, Economic, and Environmental Impact of the Level of Decentralization in Energy Investment Decisions
- *Marc Somers* (2011-2011): Collective Innovation Ecosystem for Design Courses
- *HaoYun Huang* (2008 - 2010): Analysis of the Structure and Evolution of an Open-Source Community

BS (Honors)

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

Professional Activities**Invited Talks**

1. TACTICS - Technical Architects Conference, Tata Consulting Services, Pune, India. January 03, 2013
2. 2-day workshop (with Farrokh Mistree) on *Engineering Education for the 21st Century*, College of Engineering, Pune, India. May 17-18, 2013.

International Conference Service

1. *Conference Chair*, ASME 10th International Conference on Design Education (DEC) (2013-2014)
2. *Program Chair*, ASME 10th International Conference on Design Education (DEC) (2012-2013)
3. *Past Chair and Awards committee chair*, ASME CIE Computer Aided Product and Process Design (CAPPD) Technical Committee (2013-2014)
4. *Panel organizer*, Educating the Faculty of the Future, DEC-2-2, at the 2013 Design Education Conference (DEC) at the ASME iDETC conference
5. *Chair*, ASME CIE Computer Aided Product and Process Design Technical Committee (2012-2013)
6. *Vice-chair*, ASME CIE Computer Aided Product and Process Design Technical Committee (2011-2012)
7. *Secretary*, ASME CIE Computer Aided Product and Process Design Technical Committee (2010-2011)
8. *Review coordinator*, "Systems Engineering," CIE-26 at 2011 CIE Conference
9. *Session Chair*, "Design Process Modeling," CIE-9-4 at 2010 CIE Conference
10. *Review coordinator*, "Conceptual Design Methods," DAC-3 at 2010 DAC Conference

11. *Co-organizer, "Network Centric Product Realization,"* Special session at 2009 CIE Conference
12. *Review coordinator, "Feature-Based Design and Recognition,"* CIE-1-2 at 2009 CIE Conference
13. *Co-organizer, "Mass Collaborative Product Realization,"* Workshop at 2008 ASME CIE Conference

External Examiner

1. *MS Thesis committee member* for Gaurav Satija (2013), Purdue University, Thesis Title: Economic and Environmental Consequences of Widespread Expansion of Solar Energy.
2. *PhD Thesis committee member* for Yibai Li (2013), Washington State University. Thesis title: Social Computing: Concepts, Application, and Theory.
3. *PhD Thesis committee member* for Inna Rytsareva (current), Washington State University. Thesis title: Clustering approaches in Complex Bipartite Networks.
4. *PhD Thesis committee member* for He Huang, Spring 2012, Washington State University. Thesis title: A CAD-based design framework for energy efficient product life cycle.
5. *MS Thesis committee member* for Raghu Srinivasan, Fall 2011, Washington State University. Thesis title: Sustainability Analysis and Connective Complexity Method for Selective Disassembly time prediction.
6. *MS Thesis committee member* for Ayan Sinha, Spring 2011, Georgia Institute of Technology. Thesis title: Uncertainty Management in Hierarchical Systems Design
7. *MS Thesis committee member* for Kenway Chen, Fall 2008, Georgia Institute of Technology. Thesis title: MCAD - ECAD Integration: Constraint Modeling and Propagation
8. *MS Thesis committee member* for Stephanie Thompson, Summer 2007, Georgia Institute of Technology. Thesis title: Material Selection vs. Material Design: A Trade-off Between Design Freedom & Design Simplicity

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*

University-Level Service Activities

1. 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.
2. IT committee member at Georgia Tech, Savannah, January 2006 – December 2006.
3. 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, American Society for Engineering Education (ASEE)

List of Publications

PhD Dissertation

Panchal, J.H., "A Framework for Simulation-Based Integrated Design of Multi-Scale Products and Design Processes," presented to the faculty of *The G.W. Woodruff School of Mechanical Engineering*, December 2005, Georgia Institute of Technology: Atlanta, Georgia.

Electronic copy available at: <http://etd.gatech.edu/theses/available/etd-11232005-112626/>

MS Thesis

Panchal, J.H., "Towards a Design Support System for Collaborative Product Realization," presented to the faculty of *The G.W. Woodruff School of Mechanical Engineering*, May 2003, Georgia Institute of Technology: Atlanta, Georgia.

Electronic copy available at: <http://etd.gatech.edu/theses/available/etd-10312003-190752/>

<i>Book</i>

- 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

<i>Book Chapters</i>

- B2. **Panchal, J. H.** and Le, Q., 2014, "Product Development by Self-Organized Virtual Communities," *Advances in Computers and Information in Engineering Research*, ASME press, accepted.
- B3. 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*, Gosper, M. and Ifenthaler, D. (eds.), 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.
- B4. 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.
- B5. 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* (W. Wimmer, J. Kauffman, Eds.), Springer. ISBN: 978-1-4020-8939-8.
- B6. 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*, (L. Wang and A. Nee, Editors), Springer, pp. 37-70.
- B7. **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* (W. Li, S. Ong, C. McMahon and A. Nee, Eds.), Springer-Verlag, pp. 211-244.
- B8. **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.

<i>Journal Papers</i>

- J1. Taha, A. and **Panchal, J. H.**, 2013, "Multilevel Decision-making in Decentralized Energy Systems with Multiple Technologies and Uncertainty," *IEEE Transactions on Systems, Man and Cybernetics: Systems*, in press.
- J2. Hawthorne, B., **Panchal, J. H.**, 2013, "Bilevel formulation of a Policy Design Problem Considering Multiple Objectives and Incomplete Preferences," *Engineering Optimization*, in press. DOI: 10.1080/0305215X.2013.819093. Available online.
URL: <http://www.tandfonline.com/doi/abs/10.1080/0305215X.2013.819093#UkREcj-wXr4>
- J3. **Panchal, J. H.**, Kalidindi, S. R., McDowell, D. L., 2013, "Key Computational Modeling Issues in Integrated Computational Materials Engineering," *Journal of Computer-Aided Design*, Vol. 45, No. 1, pp. 4-25.
- J4. Sinha, A., Bera, N., Allen, J. K., **Panchal, J. H.**, Mistree, F., 2013, "Uncertainty Management in the Design of Multiscale Systems," *Journal of Mechanical Design*, Vol. 135, No. 1, pp. 011008(1-16).
- J5. Le, Q. and **Panchal, J. H.**, 2012, "Analysis of the Interdependent Co-evolution of Product Structures and Community Structures Using Dependency Modeling Techniques," *Journal of Engineering Design (special issue on Dependency Modeling in Complex System Design)*, Vol. 23, Nos. 10-11, pp. 804-825.
- J6. **Panchal, J.H.**, Olusola, A., Malak, R., 2012, "Designing Undergraduate Design Experiences – A Framework based on the Expectancy-Value Theory," *International Journal of Engineering Education*, Vol. 28, No. 4, pp. 871-879.
- J7. Schaefer, D., **Panchal, J. H.**, Thames, J. L., Haroon, S., Mistree, F., 2012, "Educating Engineers for the Near Tomorrow," *International Journal of Engineering Education*, Vol. 28, No. 2, pp. 381-396.
- J8. Le, Q. and **Panchal, J. H.**, 2012, "Building Smaller-Sized Surrogate Models of Complex Bipartite Networks based on Degree Distributions," *IEEE Transactions on Systems, Man, and Cybernetics – Part A: Systems and Humans*, Vol. 42, No. 5, pp. 1152 - 1166. DOI: 10.1109/TSMCA.2012.2183589.
- J9. **Panchal, J. H.**, Messer, 2011, "Extracting the Structure of Design Information from Collaborative Tagging," *Journal of Computing and Information Science in Engineering*, Vol. 11, No. 4, 041007(1-11).
- J10. Huang, H-Y, Le, Q., and **Panchal, J. H.**, 2011, "Analysis of the Structure and Evolution of an Open-Source Community," *Journal of Computing and Information Science in Engineering*, Vol. 11, No. 3, 031008 (1-14).
- J11. Messer, M., **Panchal, J. H.**, Allen, J. K., Mistree, F., 2011, "Model Refinement Decisions Using the Process Performance Indicator," *Engineering Optimization*, Vol. 43, No. 7, pp. 741-762.
- J12. Le, Q. and **Panchal, J. H.**, 2011, "Modeling the Effect of Product Architecture on Mass-Collaborative Processes," *Journal of Computing and Information Science in Engineering*, Vol. 11, No. 1, (011003)1-12.
- J13. Messer, M., **Panchal, J. H.**, Krishnamurthy, V., Klein, B., Yoder, D. P., Allen, J. K., and Mistree, F., 2010, "Model Selection under Limited Information using a Value of Information Based Indicator," *Journal of Mechanical Design*, Vol. 132, No. 12, (121008)1-13.
- J14. Ameta, G., **Panchal, J. H.**, and Pezeshki, C., 2010, "A Collective-Learning Approach to Sustainable Design Education," *International Journal of Engineering Education*, Vol. 26, No. 2, pp. 265-270.

- J15. **Panchal, J. H.**, 2009, "Agent-Based Modeling of Mass-Collaborative Product Development Processes," *Journal of Computing and Information Science in Engineering*, Vol. 9, No. 3, (031007)1-12.
- J16. **Panchal, J.H.**, Paredis, C. J. J., Allen, J. K., and Mistree, F., 2009, "Managing Design-Process Complexity: A Value-of-Information Based Approach for Scale and Decision Decoupling," *Journal of Computing and Information Sciences in Engineering*, Vol. 9, No. 2, (021005)1-12.
- J17. **Panchal, J. H.**, Fernández, M. G., Paredis, C. J. J., Allen, J. K., and Mistree, F., 2009, "A Modular Decision Centric Approach for Reusable Design Processes," *Concurrent Engineering: Research and Applications*, Vol. 17, No. 5, pp. 5-19.
- J18. Schaefer, D., **Panchal, J. H.**, 2009, "Incorporating Research into Undergraduate Design Courses: A Patent-Centered Approach," *International Journal of Mechanical Engineering Education*, Vol. 37, No. 2, pp. 98-110.
- J19. Rippel, M., Schaefer, D., Mistree, F., and **Panchal, J. H.**, 2009, "Fostering Collaborative Learning and Mass-Customization of Education in a Graduate Engineering Design Course," *International Journal of Engineering Education*, Vol. 25, No. 4, pp. 729-744.
- J20. Fathianathan, M. and **Panchal, J. H.**, 2009, "Modeling an Ongoing Design Process Utilizing Top-down and Bottom-up Design Strategies," *Proceedings of the Institution of Mechanical Engineers - Part B: Journal of Engineering Manufacture*, Vol. 223, No. 5, pp. 547-560.
- J21. Fathianathan, M. and **Panchal, J. H.**, 2009, "Incorporating Design Outsourcing Decisions within the Design of Collaborative Design Processes," *Computers in Industry*, Vol. 60, No. 6, pp. 392-402.
- J22. Fathianathan, M., **Panchal, J. H.**, and Nee, A. Y. C., 2009, "A Platform for Facilitating Mass Collaborative Product Realization," *CIRP Annals*, Vol. 58, No. 1, pp. 127-130.
- J23. **Panchal, J. H.**, Paredis, C. J. J., Allen, J. K., and Mistree, F., 2008, "A Value-of-Information Based Approach to Simulation Model Refinement," *Engineering Optimization*, Vol. 40, No. 3, pp. 223 - 251.
- J24. Schaefer, D., **Panchal, J. H.**, Choi, S.-K., and Mistree, F., 2008, "Strategic Design of Engineering Education for the Flat World", *International Journal of Engineering Education - Special Issue on Design and Engineering Education in a Flat World*, Vol. 24, No. 2, pp. 274-282.
- J25. **Panchal, J. H.** and Schaefer, D., 2007, "Towards Achieving Agility in Web Based Virtual Enterprises: A Decision-Centric Approach," *International Journal of Internet Manufacturing and Services: Special Issue on Web-Based Approach to Design, Manufacturing and Life-Cycle Engineering*, Vol. 1, No. 1, pp. 51-74.
- J26. **Panchal, J. H.**, Fernández, M. G., Allen, J. K., Paredis, C. J. J., and Mistree, F., 2007, "An Interval Based Constraint Satisfaction (IBCS) Method for Decentralized Multifunctional Design," *Concurrent Engineering: Research and Applications*, Vol. 15, No. 3, pp. 309-323.
- J27. **Panchal, J. H.**, Choi, H.-J., Allen, J. K., McDowell, D. L., and Mistree, F., 2007, "A Systems Based Approach for Integrated Design of Materials, Products, and Design Process Chains," *Journal of Computer-Aided Materials Design*, Vol. 14, pp. 265-293.
- J28. McDowell, D. L., Choi, H.-J., **Panchal, J. H.**, Austin, R., Allen, J. K., and Mistree, F., 2007, "Plasticity-Related Microstructure-Property Relations for Materials Design," *Key Engineering Materials*, Vol. 340-341, pp. 21-30.

Journal Papers (under review)

- J29. Le, Q. and **Panchal, J. H.**, 2012, "A Generative Network Model for the Evolution of Open-Source Software Products," *Journal of Computing and Information Science in Engineering*, under review.
- J30. Sha, Z., and **Panchal, J.H.**, 2013, "Estimating the Node-Level Behaviors in Complex Networks from Structural Datasets," *Journal of Mechanical Design*, under review.
- J31. Kulkarni, N., Gautham, B.P., Zagade, P., **Panchal, J.H.**, Allen, J.K., Mistree, F., "Exploring Geometry and Material Space in Gear Design," *Engineering Optimization*, under review.

Refereed Conference Papers

- C1. 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. **(Robert E. Fulton Best Paper Award for 2013)**
- C2. Sha, Z., and **Panchal, J.H.**, 2013, "Towards the Design of Complex Evolving Networks with High Robustness and Resilience," *Procedia Computer Science*, Vol. 16, *Proceedings of the 2013 Conference on Systems Engineering Research (CSER, March 19-22, Atlanta, GA)*, pp. 522-531.
- C3. Gautham, B. P., Gupta, P., Kulkarni, N., **Panchal, J. H.**, Allen, J. K., Mistree, F., 2013, "Robust Design of Gears with Material and Load Uncertainties," *2013 ASME I-DETC Design Automation Conference*, Portland, OR. Paper Number: DETC2012-12170.
- C4. Kulkarni, N., Zagade, P., Gautham, B. P., **Panchal, J. H.**, Allen, J. K., Mistree, F., 2013, "PREMAP – Exploring the Design and Materials Space for Gears," *Lecture Notes in Mechanical Engineering, 2013 International Conference on Research into Design (ICoRD'13, Chennai, India)*, Springer India. pp. 745-757.
- C5. Kumar, P., Goyal, S., Singh, A. K., Allen, J. K., **Panchal, J. H.** and Mistree, F., 2013, "PREMAP: Exploring the Design Space for Continuous Casting of Steel," *Lecture Notes in Mechanical Engineering, 2013 International Conference on Research into Design (ICoRD'13, Chennai, India)*, Springer India. pp. 759-772.
- C6. Jain, A., Thirugnanam, S., Narsingpurkar, A., and **Panchal, J. H.**, 2013, "Next Generation Technologies for Improving Product Planning and Development – An Industry Perspective," *2013 ASME International Mechanical Engineering Congress and Exposition (ASME IMECE'13)*, San Diego, CA. Paper Number: IMECE2013-65173.
- C7. Hawthorne, B. D. and **Panchal, J. H.**, 2012, "Policy Design for Sustainable Energy Systems Considering Multiple Objectives and Incomplete Preferences," *2012 ASME Design Automation Conference*, Chicago, IL. Paper Number: DETC2012-70426.
- C8. Rytsareva, I., Le, Q., Conner, E., Kalyanaraman, A., and **Panchal, J.H.**, 2012, "Evaluating Socio-Technical Coordination in Open-Source Communities: A Cluster-based Approach," *2012 ASME Computers and Information in Engineering*, Chicago, IL. Paper Number: DETC2012-70604.
- C9. Le, Q. and **Panchal, J. H.**, 2012, "Network-based Analysis of the Structure and Evolution of an Open Source Software Product," *45th Hawaii International Conference on System Sciences (HICSS)*, Maui, Hawaii, pp. 3436-3445. DOI: 10.1109/HICSS.2012.446.

- C10. Hawthorne, B. D., Sha, Z., **Panchal, J. H.**, and Mistree, F., 2012, "Developing Competencies for the 21st Century Engineer," *2012 ASME Design Education Conference*, Chicago, IL. Paper Number: DETC2012-71153.
- C11. Siddique, Z., **Panchal, J. H.**, Schaefer, D., Haroon, S., Allen, J. K., and Mistree, F., 2012, "Competencies for Innovating in the 21st Century," *2012 ASME Design Education Conference*, Chicago, IL. Paper Number: DETC2012-71170.
- C12. Bertus, C., Khosrojerdi, A., **Panchal, J. H.**, Allen, J. K., and Mistree, F., 2012, "Identifying Dilemmas Embodied in the 21st Century Engineering," *2012 ASME Design Education Conference*, Chicago, IL. Paper Number: DETC2012-71163.
- C13. Ahmed, S., Xiao, M., **Panchal, J. H.**, Allen, J. K., and Mistree, F., 2012, "Managing Dilemmas Embodied in the 21st Century Engineering," *2012 ASME Design Education Conference*, Chicago, IL. Paper Number: DETC2012-71168.
- C14. **Panchal, J. H.**, 2011, "Equilibrium Design Problems in Complex Systems Realization," *International Conference on Engineering Design (ICED'11)*, Copenhagen, Denmark. Paper Number: ICED'11/254.
- C15. Liu, Y., Hawthorne, B., **Panchal, J. H.**, 2011, "Evaluating the Technical, Economic, and Environmental Impact of the Level of Decentralization in Energy Investment Decisions," *2011 ASME International Mechanical Engineering Congress and Exposition (ASME IMECE'11)*, Denver, CO. Paper Number: IMECE2011/62965.
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