

# Eswar Sivaraman

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## EDUCATION ◇ **Ph.D., Industrial Engineering & Management**

Oklahoma State University, December 2002 (expected), GPA: 4.0/4.0  
Dissertation: Formal Techniques for Analyzing Business Process Models  
Advisor: Dr. Manjunath Kamath

## ◇ **M.S., Industrial Engineering & Management**

Oklahoma State University, May 1998, GPA: 3.84/4.0  
Thesis: Orthogonal Designs for Screening in Industrial Experimentation  
Advisor: Dr. Kenneth E. Case

## ◇ **B.S., Manufacturing Engineering**

National Institute of Foundry & Forge Technology(Ranchi, India), May 1992, GPA: 9.53/10.0  
Project: Modeling the Solidification of Castings using the Finite Element Method.

## WORK

### EXPERIENCE

- ◇ **Graduate Teaching Assistant**, School of Industrial Engineering & Management, August-December 1996, January-May 1998, January-May 2000, August-December 2000, August-December, 2001.

- Graduate courses: Advanced Financial & Capital Investment Analysis. Responsible for designing homework problems and some exam questions, grading assignments, and guiding students.
- Undergraduate courses: Industrial Quality Control, Facility Location & Layout, FORTRAN Programming, and Engineering Computing. Responsible for grading assignments and guiding students.

- ◇ **Graduate Research Associate**, Center for Computer Integrated Manufacturing, School of Industrial Engineering & Management, August 1998 - Present.

- Developed a general Petri-net theoretic framework for modeling and analyzing business process models, as part of a NSF-funded research initiative on scalable enterprise systems.

- ◇ **Internship**, CIENA Corporation, Cupertino, California, June-July, 2000.

- Developed an original mixed integer programming (MIP) formulation for optimal routing of multiple SONET/SDH connections, and a heuristic for hitless reconfiguration of existing SONET/SDH connections – modeled in GAMS.
- Developed an original MIP formulation for optimal routing and wavelength assignment in WDM networks.
- Developed a random planar network generator for supporting in-house software testing, simulation studies, and network failure-protection schemes.
- Published seven research reports over a period of two months.  
Supervising Manager: Mr. Derek Sanders, [dsanders@ciena.com](mailto:dsanders@ciena.com), (403) 366-4753.

- ◇ **Graduate Research Assistant**, School of Industrial Engineering & Management, January-December 1997.

- Designed and deployed a Powerbuilder application to track manufacturers, maintain records suitable for part outsourcing and make part requirement-manufacturer matches.

- RESEARCH INTERESTS
- ◇ **Systems Modeling** – Petri Nets, Simulation/Queuing Models, Performance Evaluation
  - ◇ **Statistics** – Design of Experiments, Orthogonal Arrays, Time Series, Econometrics
  - ◇ **Mathematical Programming** – Network Design, Routing, and Location Problems
  - ◇ **Applied Research** – Neural Networks, Combinatorics, Causality, and Random Graphs
- ARTICLES
- ◇ Sivaraman, E., Lyford, C.P., and Brorsen, B.W. (2002), “A General Framework for Grain Blending and Segregation.” (final revision submitted to the *Journal of Agribusiness*)
- WORKING PAPERS
- ◇ Sivaraman, E., and Kamath, M., “Business Process Modeling: Current Status and Research Issues.”
  - ◇ Sivaraman, E., and Kamath, M., “An Approach to the Verification of the Correctness of Control-flow in Business Process Models.”
  - ◇ Sivaraman, E., and Case, K.E., “An Approach to the Construction of Nearly Orthogonal Mixed-Model Screening Designs.”
  - ◇ Sivaraman, E., and Case, K.E., “Optimality Equations and New Rules for the Zone Control Chart.”
- CONFERENCE PROCEEDINGS
- ◇ Sivaraman, E. (2002), “A Critique of Temporal Difference Learning, and a New Approach to Machine Learning,” to be presented at the 2002 Smart Engineering System Design (ANNIE 2002) Conference, Rolla, Missouri.
  - ◇ Sivaraman, E., and Kamath, M. (2002), “On the Use of Petri Nets for Business Process Modeling,” presented at the 11<sup>th</sup> *Annual Industrial Engineering Research Conference*, Orlando, Florida.
  - ◇ Kamath, M., Dalal, N.P., Kolarik, W.J., Lau, A., Sivaraman, E., Chaugule, A., Gupta, A., Chowdhury, S., and Chanahalli, R. (2002) “An Integrated Framework for Process and Performance Modeling of Next-Generation Enterprise Systems: Design and Development Issues,” presented at the 4<sup>th</sup> *Annual USP Conference*, Lubbock, TX – judged 2<sup>nd</sup> best overall paper.
  - ◇ Sivaraman, E. (2001), “A Heuristic for Solving Quadratic Assignment Formulations in Plant Layout,” presented at the 10<sup>th</sup> *Annual Industrial Engineering Research Conference*, Dallas, TX.
  - ◇ Sivaraman, E. and Case, K.E. (1999), “An Approach to the Construction of Orthogonal Designs for Screening in Industrial Experimentation – The Method of Symmetric Constructions,” presented at the 8<sup>th</sup> *Annual Industrial Engineering Research Conference*, Phoenix, AZ.
- ABSTRACTS & TALKS
- ◇ Sivaraman, E., Brorsen, B.W., and Lyford, C. (2001), “Optimal Grain Blending and Segregation,” presented at the *Southern Agricultural Economics Association Annual Meeting*, Ft. Worth, TX, Jan. 27–31.
  - ◇ Sivaraman, E. and Case, K.E. (2001), “Optimality Equations and New Rules for the Zone Control Chart,” presented at the 10<sup>th</sup> *Annual Industrial Engineering Research Conference*, Dallas, TX.
  - ◇ Sivaraman, E. and Case, K.E. (1999), “Mixed Model Designs for Screening Experiments,” presented at the *INFORMS Fall 1999 Meeting*, Philadelphia, PA.
  - ◇ Sivaraman, E. (1999), “PAAL: A Heuristic for Solving Quadratic Assignment Formulations in Plant Layout,” sponsored paper at the *INFORMS Fall 1999 Meeting*, Philadelphia, PA.
- SEMINARS
- ◇ “What to Expect from a Graduate Education in Industrial Engineering: Opportunities, Obstacles, and Opinions.” INFORMS-OSU Brown Bag Seminar, October 2001.
  - ◇ “A General Framework for Grain Blending and Segregation.” The 12<sup>th</sup> Annual OSU Graduate Research Symposium, April 2001.

- ◇ “PAAL - A Heuristic for Solving Quadratic Assignment Formulations in Plant Layout.” The 10<sup>th</sup> Annual OSU Graduate Research Symposium, April 1999.
- ◇ “Orthogonal Designs for Screening in Industrial Experimentation.” The 9<sup>th</sup> Annual OSU Graduate Research Symposium, April 1998.
- ◇ “Orthogonal Designs for Screening in Industrial Experimentation.” INFORMS-OSU Brown Bag Seminar, March 1998.
- ◇ “Screening Designs for 2- and 3-level Factor Combinations.” INFORMS-OSU Brown Bag Seminar, October 1997.

SKILLS

- ◇ Optimization Modeling: GAMS, AMPL, OPL, LINDO/LINGO
- ◇ Scientific/Statistical Computing: SAS, MATLAB, Maple, MathCAD, Minitab
- ◇ Simulation/Queuing Analysis: ARENA, SLAM II, RAQS, MPX
- ◇ Application Development: C, Visual C++/MFC, Python, PowerBuilder, Visual Basic
- ◇ Languages: English, Tamil, Hindi, and basic courtesies in Chinese

ACTIVITIES

- ◇ Presented a poster titled “Formal Techniques for Analyzing Business Process Models” at the IIE Doctoral Colloquium, May 18-19, 2002.
- ◇ President and President-Elect, INFORMS-OSU Student Chapter (1999)
- ◇ Founder-Editor of IDEAS – Invent, Discover, Experiment, Analyze, and Synthesize, a newsletter published by the INFORMS-OSU Student Chapter (Fall 1999)
- ◇ Designed the INFORMS-OSU Student Chapter web-site (Spring 1999)  
[http://www.okstate.edu/osu\\_orgs/info-o](http://www.okstate.edu/osu_orgs/info-o)
- ◇ Chairman, INFORMS-OSU Outstanding Teaching Assistant Award Committee (Spring 1999)
- ◇ Member, OSU Academic Appeals Board (1999)
- ◇ Student Member – INFORMS, IIE, AMA
- ◇ Invited Member – Alpha Pi Mu (Industrial Engineering Honor Society) and Pi Mu Epsilon (Mathematics Honor Society)
- ◇ Vice-President, Alpha Pi Mu Student Chapter (Spring 1997)

HONORS &  
AWARDS

- ◇ February 2002. Honored by the National Institute of Foundry & Forge Technology(India) authorities who created the “S. Eswar Award of Outstanding Academic Excellence” to be presented to the top undergraduate completing his/her B.S. in Manufacturing Engineering.
- ◇ May 2000. Runner-up for the INFORMS-OSU Outstanding Teaching Assistant Award.
- ◇ May 1998. Receptient of the 1998 OSU Outstanding Graduate Research Excellence Award for oustanding M.S. Thesis.
- ◇ May 1996. Named outstanding undergraduate student at the National Institute of Foundry & Forge Technology(India).

REFERENCES

- ◇ Dr. Manjunath Kamath, Associate Professor, School of IE&M, Oklahoma State University, (405) 744-9132, mkamath@okstate.edu.
- ◇ Dr. Kenneth E. Case, Regents Professor, School of IE&M, Oklahoma State University, (405) 744-6055, kcase@okstate.edu.
- ◇ Dr. B. Wade Brorsen, Regents Professor and Jean & Patsy Neustadt Chair, Department of Agricultural Economics, Oklahoma State University, (405) 744-6836, brorsen@okstate.edu.