

EZGI CAN EREN

Ph.D. Candidate

Department of Industrial and Systems Engineering
Texas A&M University
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AREAS OF INTEREST

Stochastic Modeling of Spatial and Temporal Processes; Applied Probability; Optimization

Research Domains: Computational and Mathematical Biology; Complex Systems; Energy Efficiency

- Energy Conservation and Efficiency in Quasi-Batch Production Systems
Stochastic Dynamic Programming, Multi-Dimensional Optimal Control, Heuristic Optimization
- Dynamics, Interactions and Self-Organization in Complex Biological Systems
Markov and Fluid Flow Models, Reaction-Diffusion Equations, Information Theory and Simulation

EDUCATION

Ph.D. in Industrial and Systems Engineering, Texas A&M University (TAMU) *Expected: Dec 2011*
Advisor: Natarajan Gautam
Dissertation: Analysis of Stochastic Dynamics and Interactions in Microtubule Systems
B.S. in Industrial Engineering, Bogazici University 2004

HONORS AND AWARDS

- Student Poster Contest Second Place Award, \$500, Energy Forum 2011: Energy Security and Sustainability - Global Challenges, Texas A&M Energy Engineering Institute, 2011
- Dr. Bonnie Hunt Scholarship, TAMU, Department of Industrial and Systems Engineering, 2010
- INFORMS Future Academician Colloquium, INFORMS Annual Meeting, San Diego, 2009
- Grad Competitive Scholarship, TAMU, Department of Industrial and Systems Engineering, 2008, 2009
- Appreciation Award, for Outstanding Service to INFORMS Student Chapter, 2006, 2008
- Full Scholarship and Teaching/Research Assistantship, TAMU, Department of Industrial and Systems Engineering, 2004 - 2008
- High Honor Graduation Degree, Bogazici University, Istanbul, Turkey, 2004
- Rank in 0.01 % (Top 100 among over 1 Million Candidates), National Level University Entrance Exam, Turkey (*Abroad Scholarship by Ministry of Education for Outstanding Success*), 2000

PUBLICATIONS

In Refereed Journals:

- Eren, E.C., and Gautam, N. (2011), "Efficient Control for a Multi-Product Quasi-Batch Process via Stochastic Dynamic Programming," *IIE Transactions*, Vol. 43(03), pp. 192 - 206, (has been featured in the February issue of *IE Magazine* by Editor-in Chief).
- Eren E.C., Dixit R., and Gautam, N. (2010), "A Three-Dimensional Computer Simulation Model Reveals the Mechanisms for Self-Organization of Plant Cortical Microtubules into Oblique Arrays," *Molecular Biology of the Cell*, Vol. 21, pp. 2674–2684.

Other:

- Eren, E.C., Dixit R., and Gautam, N. (2011), "A Model for the Dynamics in a Bio-System with Interacting Components," *working paper*.
- Eren, E.C., Dixit R., and Gautam, N. (2011), "Computational and Analytical Models of the Plant Cortical Microtubule Cytoskeleton," *working paper*.
- Samur M.G., Eren E.C., Hancer O., Tunakan B.B. (2005), "A Computerized Beer Game and Decision Making Experiments," *Proceedings of International System Dynamics Conference*, Boston.

PRESENTATIONS

- Eren, E.C., Dixit, R. and Gautam, N. (2011) Lyapunov Stability for a Biological Self-Organization Process, *INFORMS Annual Conference*, Charlotte, TX. (Presenter: Eren)
- Eren, E.C. (2011) Stochastic Control of a Production Process with Spatial Variability, *Department of Industrial and Systems Engineering*, University of Florida, UF.
- Eren, E.C., and Gautam, N. (2011) Energy-Efficient Control in Process Industries, *Energy Forum 2011: Energy Security and Sustainability - Global Challenges*, Texas A&M Energy Engineering Institute, College Station, TX. (Presenter: Eren)
- Eren, E.C., Dixit, R. and Gautam, N. (2010) Modeling Self-organization of Microtubules Inside the Plant Cell, *INFORMS Annual Conference*, Austin, TX. (Presenter: Eren)
- Eren, E.C., Dixit, R. and Gautam, N. (2010) Modeling Microtubule Dynamics Inside the Plant Cell, *INFORMS Annual Conference*, Austin, TX. (Presenter: Eren)
- Eren, E.C., Dixit, R. and Gautam, N. (2009) Stochastic Models for Microtubule Dynamics and Organization inside the Plant Cell, *INFORMS Annual Conference*, San Diego, CA. (Presenter: Eren)
- Eren, E.C., and Gautam, N. (2008) Stochastic Optimal Control of a Quasi-Batch Production Process, *INFORMS Annual Conference*, Washington, DC. (Presenter: Eren)
- Dixit, R., Eren, E.C., and Gautam, N. (2008) Self-organized Complexity in the Plant Cortical Microtubule Array, *NAKFI Complex Systems Conference*, Irvine, CA. (Presenter: Dixit)
- Eren E.C., Hancer O., Samur M.G., Tunakan B.B. (2005) A Computerized Beer Game and Decision Making Experiments, *International System Dynamics Conference*, Boston, MA. (Presenters: Hancer and Tunakan)

RESEARCH AND TEACHING EXPERIENCE

Graduate Teaching and Research Assistantship, TAMU ISEN Department

- Courses Taught:
ISEN 302 - Engineering Economic Analysis Fall 2008
Course Evaluation: 4.16/5.00
- Courses Taught as a Guest Instructor:
ISEN 421 – Operations Research II Fall 2009
(M/G/1 and G/M/1 queueing systems)
- Courses Served as a Teaching Assistant:
(Teaching, testing and/or grading, individual counseling of undergraduate/graduate students)
ISEN 314- Statistical Control of Quality Fall 2007
ISEN 601- Location Logistics of Industrial Facilities Spring 2006
ISEN 615- Production and Inventory Control Fall 2005
ISEN 430- Human Factors and Ergonomics Spring 2005
ISEN 302- Engineering Economic Analysis Fall 2004, Spring 2005
- Research Projects Assisted:
Collaborative Research: Molecular Analysis and Modeling of Plant Cortical Microtubule Arrays Spring 2008 - present
Effective Inventory Management and Capacity Utilization under Demand Uncertainty for Technology Products with Short Life Cycles, Nokia Fall 2006
- Research Groups:
Group for Research on Engineering ENergy-efficiency (GREEN), Group for Modeling Dynamics and Interactions in Biological Systems (BIO), Complex Systems Study Group

INDUSTRY EXPERIENCE

- Intern Researcher, Knowledge Based Systems Inc., College Station, TX
Jan - Aug 2008, Jan - May 2009
Developed a system dynamics model for a shipbuilding environment with multiple production phases, labor and schedule management components to analyze the dynamics and assess the impacts of production planning on cost, rework and schedule performance; and quality.

- Intern, Strategy Planning Dept., Pfizer, Istanbul, Turkey Aug 2003 - Sep 2003
- Intern, Production Planning Dept., ASSAN Aluminum, Istanbul, Turkey Jun 2003 - Jul 2003
- Intern, IT Dept., Siemens, Istanbul, Turkey Jun 2002 - Jul 2002

RELEVANT COURSEWORK

A Total of 23 Graduate Level Courses (*GPA:3.71/4.00*):

- *Optimization and Simulation:*
 - Linear Programming
 - Nonlinear Programming and Dynamic Programming
 - Heuristic Optimization
 - Simulation Methods and Applications
 - System Dynamics Simulation
- *Statistics, Probability and Stochastic Processes:*
 - Theory of Probability
 - Theory of Statistics
 - Applied Random Processes (Probability and Measure Theory)
 - Stochastic Processes and Assurance Sciences
 - Stochastic Processes (*from Statistics*)
 - Applied Distribution and Queuing Theory
 - Stochastic Dynamic Programming
- *Manufacturing Systems, Supply Chain Management, and Logistics:*
 - Modeling and Analysis of Manufacturing Systems
 - Production and Inventory Control
 - Supply Chain Management
 - Advanced Logistics
 - Inventory Theory
 - Vendor Managed Inventory
- *Mathematics:*
 - Advanced Calculus
 - Topics in Real Analysis
 - Real Analysis
- *Computer Science:*
 - Object Oriented Programming and Software Engineering (C++)
- *Economics:*
 - Microeconomic Theory (Game Theory)

COMPUTER SKILLS

C, C++, Java; MATLAB, Maple, Mathematica, CPLEX, GAMS; Arena, SIMAN, Powersim, STELLA, Vensim; LaTeX, MS VBA, MS Project, AutoCAD R14, Minitab.

SERVICE ACTIVITIES AND AFFILIATIONS

- *Reviewing:* Operations Research, Management Science, Computers and Operations Research, Molecular and Cellular Biology, International Journal of Inventory Research
- *Conference Session Organization:*
 - Sponsored Session Chair for the Computing Society Cluster, INFORMS Annual Meeting, San Diego (Session Title: Computational Biology) Oct 2009
 - Invited Session Organizer/Chair for Complex Systems Cluster, INFORMS Annual Meeting, Austin (Session Title: Emergent Dynamics and Behavior in Biology and Life Sciences) Nov 2010
- *Officer Positions:*
 - OR/ MS Tomorrow, INFORMS
 - Co-editor Sep 2006 - present
 - TAMU Student Chapter of INFORMS
 - President Jan 2007 - Jan 2008
 - President-Elect Jan 2006 - Jan 2007
 - Vice President and Newsletter Editor Jan 2005 - Jan 2006
 - International Graduate Student Association (IGSA), TAMU
 - Vice President of Programs May 2005 - May 2006
- *Membership:* INFORMS (*incl. Applied Probability Society, Computing Society*), IIE