

# Mihaela Irina Enăchescu

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## OBJECTIVE for SUMMER 2007

A research internship in Computer Science. My primary research interests are: design and analysis of algorithms especially in the context of networking applications, algorithmic game theory, mechanism design, auctions, and combinatorial optimization.

## EDUCATION

- STANFORD UNIVERSITY**, Stanford, CA **Sept '02 -- June '08**  
M.S. in Computer Science; PhD candidate in **theoretical Computer Science** (GPA: 4.3).  
Thesis topic: **network optimization algorithms**. Advisor: Ashish Goel, joint Professor of MS&E and CS.
- HARVARD UNIVERSITY**, Cambridge, MA **Sept '98 – June '02**  
B.A. in **Mathematics** and **Computer Science**, Magna cum Laude (Major GPA: 3.93).  
Harvard College Scholarship for academic achievements (Dean's List) during all eight semesters.

## WORK & RESEARCH EXPERIENCE

- STANFORD UNIVERSITY**, Stanford, CA
- Research Assistant** (Algorithms for Networking, Prof. Ashish Goel) **Jan '03 -- Present**
- Explored various theoretical models and algorithms for different types of networks: **sensor networks**, optical networks, and **social networks**;
  - Utilized tools from random walk analysis, stochastic processes, graph theory;
  - Published and presented *Scale-Free Aggregation in Sensor Networks*, ALGOSENSORS, Finland, July 2004;
  - Published *Routers with very small buffers*, IEEE INFOCOM 2006.
- NEC LABS**, Princeton, NJ
- Research Associate (Broadband and Wireless Networks**, Mentor Ravi Kokku) **Summer '06**
- Researched solutions for various issues related to the deployment of **multi-path transfers** in **broadband networks** and developed approximation algorithms with provable guarantees;
  - Reformulated the problem and implemented heuristic algorithms, proved various hardness results.
- HEWLETT-PACKARD LABS ORGANIZATION**, Palo Alto, CA
- Research Associate** (Algorithms Publishing Systems Technology Department, Man. Anna Durante) **Summer '04**
- Worked as a team of three in researching, modeling, and providing solutions for technological issues related to automatic image and text layout using **linear programming** techniques;
  - Developed a working prototype, and improved both the time efficiency and the final output, by working on the underlying algorithms used by the prototype.
- HARVARD UNIVERSITY**, Cambridge, MA
- Undergraduate Research Assistant (Coding Theory**, Prof. Michael Mitzenmacher) **June '01 – April '02**
- Wrote senior thesis on the latest advancements of Low-Density Parity Check (LDPC) codes;
  - Explored different heuristics that would lead to the discovery of short LDPC codes.
- Undergraduate Research Assistant** (Web Graphs, Prof. Michael Mitzenmacher) **Summer '00**
- Studied and implemented possible models that could lead to the observed properties of the web graph.
- PROGRAM OF INFORMATION RESOURCES POLICY**, Cambridge, MA **Summer '01**
- Computer Assistant & Network Administrator**
- Maintained the PIRP network and website and provided user support for commonly used programs such as Adobe Acrobat, Dreamweaver, MS Access.

**LEVERETT HOUSE, Harvard University, Cambridge, MA**

**Web Page Designer**

**June '00 – May '02**

- Used PHP3 & SQL programming to design and implement a new system that allows any house resident to create and respond to new questionnaires, provided the questionnaires are approved by the House Master.

## ACTIVITIES & AWARDS

**Published Articles:**

- *Routers with very small buffers*, M. Enachescu, Y. Ganjali, A. Goel, N. McKeown, and T. Roughgarden. ACM/SIGCOMM Computer Communication Review, Volume 35, Number 3, July 2005.
- *Scale-Free Aggregation in Sensor Networks*, M. Enachescu, A. Goel, R. Govindan, and R. Motwani. ALGOSENSORS, Finland, July 2004.
- *Variations on Random Graph Models for the Web*, E. Drinea, M. Enachescu, and M. Mitzenmacher. Harvard Technical Report TR-06-01, Harvard University, June 2001.
- *Geometric Methods for Solving Some Trigonometric Problems*, Mihaela Enachescu, Computer Matematica, Romania, April 1997.

**President/VP** of the Romanian Student Association, Stanford University, '03-'05.

**Collaborative Research Experience for Women (CREW) Grant Recipient** for research conducted together with Laura Serban and Evdokia Nikolova, under the supervision of Michael Mitzenmacher, on a LDPC Codes. Studied LDPC codes which quickly converged under iterative decoding algorithms, Harvard University, '01-'02.

**William James Casey Scholarship** for selected juniors and sophomores with exceptional academic performance, Harvard University ('00-'01).

**Team leader** in problem solving competition, Waterloo Math Camp, Canada, Summers '97 and '98.

Silver Medal and Bronze Medal Winner, **International Mathematics Olympiad**, Taiwan, '98 and Argentina, '97.

Silver Medal Winner, **Asian-Pacific Math Olympiad** '98.

## TEACHING EXPERIENCE

**STANFORD UNIVERSITY, Stanford, CA**

**Instructor**

**Summer '05**

- Design and Analysis of Algorithms (30 students).

**Teaching Assistant**

**Winter '03 -- Present**

- Randomized Algorithms, graduate-level course (Prof. Rajeev Motwani, Winter '03);
- Optimization and Algorithmic Paradigms (Prof. Serge Plotkin, Winter '07);
- Introduction to Automata and Complexity Theory (Prof. Rajeev Motwani, Spring '03);
- Design and Analysis of Algorithms (Dr. Jerry Cain, Summer '03).

**HARVARD COLLEGE, HARVARD EXTENSION SCHOOL, Cambridge, MA**

**Sept '99 – June '02**

**Teaching Assistant in Mathematics and Computer Science**

- Introduction to Algorithms and Data Structures (Prof. M. Mitzenmacher, Spring '01, '02);
- The Theory of Computation and its Applications (Fall '00, '01);
- Abstract Algebra, Graph Theory, and Combinatorics (Summer '01);
- Honors Advanced Calculus and Linear Algebra A & B (Spring '00, Fall '99).

## SKILLS & INTERESTS

**Computer skills:** Solid programming experience in C/C++, Java, Visual Basic, PHP3, SQL, Matlab.

**Personal:** Good communication skills, teamwork experience. Fluent in English, French, and Romanian.

**Interests:** Problem solving, reading, modern art, ballroom dancing, traveling, and hiking.