
EDUCATION

Cornell University, Ithaca, NY

- Ph.D. in Electrical and Computer Engineering, expected January 2015.
Thesis Title: Optimal Topologies and Algorithms for Minimizing Data Retransmissions in Wireless Networks.
Thesis Advisor: Prof. Zygmunt J. Haas.
- M.S. in Electrical and Computer Engineering, January 2014, GPA: 3.88

SUNY: College at Brockport

- B.S. in Computer Science, B.S. in Mathematics, Minor in Physics, May 2009, GPA 3.95, *Summa Cum Laude*

EMPLOYMENT

Research Assistant Wireless Networks Laboratory, Cornell University Fall 2009 - Fall 2014

Wireless Networks Design: <http://www.mnikolov.com/tc> November 2012 - March 2014

- Investigated automated positioning of devices in wireless networks for optimal throughput and latency.
- Showed optimal algorithm runtime is $O(2^n)$. Designed 97%-effective $O(n^2)$ heuristic. (MATLAB)

Data Reporting in Sensor Networks: <http://www.mnikolov.com/es> June 2011 - October 2012

- Formulated new data encoding algorithms leveraging correlation models of measurements. (Java)
- Improved radio energy consumption by a factor of two over the existing schemes.

Broadcast in Mobile Networks: <http://www.mnikolov.com/bc> October 2009 - May 2011

- Developed a new distributed algorithm based on graphical models for wireless broadcast. (Java)
- Improved broadcast efficiency by at least 20% and reduced device cost by 30% over competitive algorithms.

Publications and Presentations: <http://www.mnikolov.com/pp>

- Published research results and presented at highly selective international conferences.

Teaching Assistant, *Wireless Networks* Cornell University Spring 2013

- Led weekly problem sessions for students (class of 30+).
- Supervised course graders.

TECHNICAL PROJECTS

Data Centers Power Management: <http://www.mnikolov.com/dc> Spring 2013 - Fall 2014

- Drafted a new strategy and research proposal on job-centered power management policies for data centers.
- Awarded \$160,000 NSF EAGER Grant. (Principal Investigator: Prof. Zygmunt J. Haas)

Mirlix: Lyrics Revisited: <http://www.mnikolov.com/mirlix> Spring 2013 - Spring 2014

- Extracted 800,000+ songs from the web into a key-value database, augmented with tf-idf based search engine.
- Implemented ad-free web-interface running on Amazon EC2 instance. (JavaScript, PHP and Java)

Modeling Inequality in Social Interactions: <http://www.mnikolov.com/sn> Spring 2011 - Fall 2011

- Interdisciplinary collaboration to model social interaction inequality as a function of graph degree distributions.
- Mined large-scale data from social networks, e.g. 539,800+ individuals on CouchSurfing. (Python)

SELECTED AWARDS AND HONORS

- *Best Paper Award*, ACM MobiCom, Workshop on Mission-Oriented Wireless Sensor Networking. 2012
- *Chancellor's Award for Student Excellence*, State University of New York (inc. all 64 campuses). 2009
- *Winner, Symbian Ltd. International Essay Contest*, Breakthrough Technology Improvements, £1000. 2008
- *The College at Brockport Distinguished Scholar in Residence Scholarship*, Tuition, Room & Board. 2005 - 2009
- *Honor societies:* Alpha Chi, Pi Mu Epsilon, Sigma Xi.

SKILLS

Technology: Java, Python, MATLAB, PHP · AJAX, CSS, HTML · Eclipse, Vim, Xcode.

Languages: Bulgarian (Native) · English (Fluent) · German (Basic).

Sports: Rock Climbing (5.11 lead) · Running (2013 Snohomish River Run 10K, 2nd in division).

SERVICE

- *Reviewer*, IEEE Transactions on Parallel and Distributed Systems. 2012 - present
- *Treasurer*, Cornell University Engineering Graduate Student Association. 2011 - 2012