

Christine Chung

Department of Computer Science • Sennott Square • University of Pittsburgh • Pittsburgh, PA 15260
914.310.9852 (mobile) • CHUNG@CS.PITT.EDU • <http://www.cs.pitt.edu/~chung>

EDUCATION

University of Pittsburgh, Pittsburgh, PA
PhD in Computer Science, expected June 2009
Evolutionary Solutions and Internet Applications for Algorithmic Game Theory
Adviser: Kirk Pruhs

Teachers College, Columbia University, New York, NY
Master of Arts Degree in Mathematics Education, August 2003

Cornell University, College of Engineering, Ithaca, NY
Master of Engineering Degree in Computer Science, May 2000
Project Adviser: Bart Selman

Cornell University, College of Arts and Sciences, Ithaca, NY
Bachelor of Arts Degree in Computer Science, May 1999

RESEARCH INTERESTS

Algorithmic Game Theory (Evolutionary Game Theory, Mechanism Design, Bounding Inefficiency of Equilibria, Auction Theory), Algorithm Design and Analysis (Online Algorithms, Approximation Algorithms)

TEACHING EXPERIENCE

University of Pittsburgh, Pittsburgh, PA
August 2005 – Present
Co-Instructor. In collaboration with my adviser, designed and taught a graduate course in Algorithmic Game Theory.
Teaching Assistant. Graded homework assignments and projects, taught weekly recitations and also gave some lectures. Undergraduate courses: Introduction to Theory of Computation, Design and Analysis of Algorithms, Algorithm Implementation, Discrete Structures, Operating Systems. Graduate courses: Graduate Theory of Computation, Design and Analysis of Algorithms.

Clarkstown South High School, West Nyack, NY
August 2003 – June 2005
Computer Science and Math Teacher. Taught introductory (BASIC) and advanced (Java) computer science, geometry, algebra, trigonometry, and pre-calculus to students in grades 9 through 12. Created daily lesson plans, assigned and graded daily homework, constructed and graded weekly quizzes/exams, and developed bi-weekly projects for students. Gave extra help after school each day and served as adviser for the school's Japanese animation club.

Stuyvesant High School, New York, NY
Jan 2003 – May 2003
Student Teacher. Taught the introductory computer science course at Stuyvesant (using Scheme) for six weeks, including topics such as Towers of Hanoi (using recursion). Also taught a 9th grade math class (Stuyvesant). Worked with

cooperating teachers to plan lessons and discuss teaching strategies. Help struggling students after school.

**Marist College and
Dutchess County Community College, Poughkeepsie, NY**

Jan 2002 – August 2002

Adjunct Lecturer. Planned lessons and gave lectures in Introductory Statistics (Marist), Visual Basic programming (DCCC), and Computer Information Systems (DCCC). Created, assigned, and graded homeworks, projects, exams, and quizzes. Worked extensively with students one-on-one to provide extra help or additional enrichment.

Cornell University, Ithaca, NY

September 1999 – May 2000

Teaching Assistant. Graded homework sets, exams, and programming projects for undergraduate classes in Intro to Programming (with Tim Teitelbaum) and Discrete Structures (with Joe Halpern). Held office hours, working with groups of students to discuss and resolve their questions about class material. Honored requests for private appointments with students who needed extra help. Monitored class newsgroups, answering posted questions regarding projects and homework.

**RELEVANT
CONTENT
COURSEWORK**

Pitt and CMU: Randomized Algorithms, Approximation Algorithms, Game Theory, Algorithmic Game Theory, Graph Theory, Compilers, Wide Area Networks

Cornell: Machine Learning, Seminar in Artificial Intelligence, Design and Analysis of Algorithms, Foundations of Artificial Intelligence, Reasoning about Uncertainty, Software Engineering, Intro to Analysis of Algorithms, Applied Logic, Intro to Game Theory, Systems Programming and Operating Systems, Theory of Computing, Computer Graphics, Practicum in Computer Graphics, Scientific Computation, Data Structures, Digital Systems and Computer Organization, Discrete Structures, Computers and Programming, Introduction to Computer Programming, Combinatorics, Linear Algebra, Multivariable Calculus, Applied Algebra, Engineering Probability and Statistics

Teachers College at Columbia: Number Theory, Topics in Analysis (Dynamical Systems), Topics in Topology

PUBLICATIONS

- The price of stochastic anarchy (with Katrina Ligett, Kirk Pruhs and Aaron Roth). Symposium on Algorithmic Game Theory (SAGT) 2008.
- The online transportation problem: on the exponential boost of one extra server (with Kirk Pruhs and Patchrawat Uthaisombut). Latin American Theoretical Informatics Symposium (LATIN) 2008.

**WORKS IN
SUBMISSION
OR
PREPARATION**

- The power of fair pricing mechanisms (with Katrina Ligett, Kirk Pruhs, and Aaron Roth), in submission.
- Auction-based admission control of continuous queries (with Lory AlMoakar, Panos Chrysanthis, Shenoda Guirguis, Alexandros Labrinidis, Panayiotis Neophytou and Kirk Pruhs), in submission.
- Internet congestion at bottleneck routers: stochastic stability of Nash equilibria (with Evangelia Pyrga), in preparation.
- SRPT is 5/4-competitive for completion time scheduling (with Tim Nonner and Alexander Souza), in preparation.

**INVITED
TALKS/
PRESENTATIONS**

- Stochastically stable states in load balancing and congestion games.
 - Dagstuhl Workshop on Computational Social Systems and the Internet, Germany, July 2007 (Invited by Éva Tardos)
- The price of stochastic anarchy.
 - Women In Theory Workshop Poster at Princeton University, Princeton, NJ, May 2008 (Invited by Tal Rabin)
 - University of Freiburg in Freiburg, Germany, May 2008 (Invited by Susanne Albers)
 - Max Planck Institut für Informatik (MPII) in Saarbrücken, Germany, May 2008 (Invited by Rob Van Stee)

OTHER TALKS

- Stochastically stable states in load balancing and congestion games.
 - Carnegie Mellon University (CMU) Theory Lunch, Pittsburgh, PA, May 2007
- The price of stochastic anarchy.
 - Symposium on Algorithmic Game Theory (SAGT) in Paderborn, Germany, May 2008

**OTHER WORK
EXPERIENCE**

SporTVision, New York, NY

May 2001 – Dec 2001

Lead Operator. Traveled each week with *ESPN Sunday Night Baseball* to implement and integrate the Emmy-winning *K-Zone* effect system for each show. Worked with programmers and engineers to discuss improvements for the many programs that tracked the baseball in each frame of video and created the animation effect. Set up and registered cameras, plumbed racks of equipment with audio, CAT-5, coax and triax cables, networked workstations (PCs and SGI 02s), and troubleshoot problems with the system under the pressure of live television. Documented setup and operation of entire system.

Kraft Kennedy & Lesser, New York, NY

September 2000 – May 2001

Network Engineer/Consultant/Programmer. Worked in project teams to design, implement/ integrate and support computer networks for top law firms and companies. Installed and administered Windows NT/2000 networks that supported all document management, contact management, internet, and telephony services. Provided comprehensive virus protection, remote user capabilities, remote administration capabilities, and virtual private networks

between cities. Created templates (Visual Basic) that were used by lawyers and legal assistants to create legal documents.

Lucent Technologies, Bell Labs, Murray Hill, NJ

Summer 1998

Researcher. Worked with a verification group in the Computing Sciences Research department examining the differences between branching and linear model checking, and comparing Computational Tree Logic expressions with formulae expressed with ω -automata. Helped to benchmark Bell Labs' hardware verification tool COSPAN (commercially sold as FormalCheck™) against others. Co-authored an article entitled *FormalCheck Query Language Compared with CTL*, which can be found at <http://citeseer.ist.psu.edu/yang99formalcheck.html>.

AWARDS

- 2008 Taulbee Award for Excellence in Computer Science (given annually to one graduate student in the University of Pittsburgh CS Department for evidence of outstanding teaching skills, strong research interests, and a marked interest in pursuing an academic career)
- Emmy Award (2001 National Sports Emmy Awards – The George Wensel Innovative Technical Achievement Award)

SKILLS AND HOBBIES

- Proficient in Chinese (Mandarin)
- Sports: Ultimate Frisbee (former active UPA member, Cornell Women's Team captain '99-'00, treasurer '98-'99), Tennis, Climbing
- Music: Piano, Voice, Cello

REFERENCES

Kirk Pruhs, University of Pittsburgh, kirk@cs.pitt.edu, 412-624-8844
Panos Chrysanthis, University of Pittsburgh, panos@cs.pitt.edu, 412-624-8924
Avrim Blum, Carnegie Mellon University, avrim@cs.cmu.edu, 412-268-6452
Alex Labrinidis, University of Pittsburgh, labrinid@cs.pitt.edu, 412-624-8843

CITIZENSHIP

United States