

# Michael J. Jochen

---

Computer Science Department  
East Stroudsburg University of Pennsylvania  
East Stroudsburg, PA 18301-2999

Phone: 570.422.3036  
Fax: 570.422.3490  
Email: [mjochen@po-box.esu.edu](mailto:mjochen@po-box.esu.edu)  
Web: <http://www.esu.edu/~mjochen/>

## Education

- Ph.D.** Computer and Information Sciences, University of Delaware, Newark, DE, May 2008  
Dissertation: *Mobile Code Integrity through Static Program Analysis, Steganography, and Dynamic Transformation Control*  
Advisor: Lori Pollock, Co-Advisor: Lisa Marvel, Research Scientist, U.S. Army Research Laboratory
- M.S.** Computer and Information Sciences, University of Delaware, Newark, DE, May 2000
- B.A.** Communication, University of Delaware, Newark, DE, May 1991

## Research Interests

Program analysis, compilers, computer security, and steganography

## Professional Experience

- Assistant Professor** East Stroudsburg University of Pennsylvania  
8/2007–Present Computer Science Department  
Teach graduate and undergraduate courses in computer science. Advise and mentor students. Perform scholarly research and provide service to the University and the academic community. Courses taught include:
- CPSC100:** Personal Computers and their Uses (Fall 2007, Spring 2008, Fall 2008)
  - CPSC111:** Introduction to Computer Programming (Fall 2007)
  - CPSC234:** Object Oriented Programming (Spring 2008, Fall 2008)
  - CPSC327:** Introduction to Computer Forensics (Spring 2008)
  - CPSC570:** Introduction to Research (Fall 2008)

- Instructor:** *Intro. to Computer Science* University of Delaware  
Summer 2000 Dept. of Computer and Information Sciences  
Served as the primary instructor for the majors' first course of study. Course content included basic problem solving skills, object-oriented programming (e.g., inheritance, polymorphism, and overloading), and basic data structures (e.g., stacks, queues, and lists). Areas of responsibility included:
- Developing the syllabus (i.e., creating all course content, lectures, and assignments)
  - Facilitating all class sessions
  - Meeting students during office hours for academic consulting and advising
  - Assigning and grading home work, quizzes, programming projects, and exams (programming assignments were conducted in C++)

- Laboratory Instructor:** *Computer Science* University of Delaware  
Spring 2007 Dept. of Computer and Information Sciences  
Served as a teaching assistant and laboratory instructor for a general computer course. Laboratory content included an introduction to Unix systems, C compilers, basic debugging, and programming in C. Handled four different sections with a total of 55 students. Responsibilities included:
- Conducting laboratory sessions to build computer programming skills
  - Meeting with students during office hours for academic consulting and advising
  - Grading assignments, projects, and exams

**Laboratory Instructor:** *Intro. to Computers*

Fall 1998–Spring 1999

University of Delaware

Dept. of Computer and Information Sciences

Served as a teaching assistant and laboratory instructor for a freshman-level introductory computer course. Laboratory content included the Microsoft Windows operating system and the Microsoft Office suite of applications. During each semester, handled three sections, each with twenty-five students. Responsibilities included:

- Conducting laboratory sessions to build computer skills
- Meeting with students during office hours for academic consulting and advising
- Grading assignments, projects, and exams

**Teaching Assistant**

Spring/Fall 2000

University of Delaware

Dept. of Computer and Information Sciences

Served as a teaching assistant and guest lecturer for the following undergraduate and graduate computer science courses.

- Software Engineering: Spring 2000
- Parallel Programming: Spring 2000
- Software Engineering: Fall 2000 (graduate and undergraduate)
- Computer Networks: Fall 2000

Areas of responsibility included:

- Assisting with course design and assignment creation
- Meeting with students during office hours for academic consulting and advising
- Grading assignments and projects
- Creating and presenting lectures while serving as a guest lecturer

**Refereed Publications**

Mike Jochen, Anteneh Anteneh, Lori Pollock, and Lisa Marvel. **Towards the Safe Use of Dynamically Transformed Itinerant Software.** In *Proceedings – IEEE Military Communications Conference (MILCOM)*. AFCEA/IEEE, October 2005.

Mike Jochen, Anteneh Anteneh, Lori Pollock, and Lisa Marvel. **Enabling Control Over Adaptive Program Transformation for Dynamically Evolving Mobile Software Validation.** In *Software Engineering for Secure Systems (SESS), co-located with the International Conference on Software Engineering (ICSE)*, May 2005.

Anteneh Anteneh, Mike Jochen, Lori Pollock, and Lisa Marvel. **Initial Studies of Distributed, Adaptive Program Transformation Controls.** In *Conference on Information Sciences and Systems (CISS)*, March 2005.

Mike Jochen, Lisa Marvel, and Lori L. Pollock. **A Framework for Tamper Detection Marking of Mobile Applications.** In *Proceedings of the Fourteenth International Symposium on Software Reliability Engineering (ISSRE)*. IEEE, November 2003. (19% acceptance rate)

Mike Jochen, Lisa Marvel, and Lori L. Pollock. **Tamper Detection Marking for Object Files.** In *Proceedings – IEEE Military Communications Conference (MILCOM)*. IEEE, October 2003. (20% acceptance rate)

Mike Jochen, Lisa Marvel, and Lori L. Pollock. **MOST: A Tamper Detection Tool for Mobile Java Software.** In *Proceedings of the 3rd Annual Information Assurance Workshop*. IEEE, June 2002.

Mike Jochen, Lisa Marvel, and Lori L. Pollock. **Bandwidth Efficient Tamper Detection for Distributed Java Systems.** In *Proceedings of the 16th International Symposium on High Performance Computing Systems and Applications (HPCS)*. IEEE, June 2002.

Lori Pollock and Mike Jochen. **Making Parallel Programming Accessible to Inexperienced Programmers through Cooperative Learning.** In *32nd SIGCSE Technical Symposium on Computer Science Education*. ACM Press, February 2001. (35% acceptance rate)

### Funding Proposals

Participated in the discussions and writing of the successful proposal for the National Science Foundation Information Technology Research program: **Bandwidth Efficient Techniques for Ensuring Mobile Code Integrity and Authentication.** Amount awarded: \$328,173, September 2002–August 2006.

Participated in the discussions and writing of the successful grant renewal for the Army Research Laboratory: Collaborative Technology Alliance in Communications and Networks FY2006 Annual Program Plan. For continuance of student portion of \$3,500,000 multi-year grant for fiscal year 2002, 2003, 2004, 2005, and 2006.

### Invited Talks

**Guest Lecturer.** *University of Delaware UNIV 602 – Faculty Roles in Institutions of Higher Education..* Newark, DE, July 2008.

**Senior TA Panel Discussion.** *University of Delaware 2006 Annual Conference for Graduate Teaching Assistants.* Newark, DE, August 2006.

**Mentoring Undergraduate Students in a Research Environment.** *University of Delaware Department of Computer and Information Sciences seminar for New Graduate Students,* Newark, DE, November 2004.

**Incorporating Instructional Technologies into Your Teaching.** *University of Delaware 2001 Annual Conference for Graduate Teaching Assistants,* Newark, DE. June 2001.

**Senior TA Panel Discussion.** *University of Delaware 2001 Annual Conference for Graduate Teaching Assistants,* Newark, DE, June 2001.

### Presentations

**Efficient Information Assurance for Mobile Agents and Applications.** *U.S. Army Collaborative Technology Alliance Task Review,* Newark, DE, March 2004.

**Securing Trust for Mobile Code.** *University of Delaware Department of Computer and Information Sciences Seminar Talk,* Newark, DE, May 2003.

**Tamper Detection and Information Assurance for Programs.** *U.S. Army Collaborative Technology Alliance Task Review,* Newark, DE, March 2003.

**Efficient Tamper Detection.** *University of Delaware Department of Computer and Information Sciences Seminar Talk,* Newark, DE, December 2002.

**Bandwidth Efficient Tamper Detection for Distributed Java Systems.** *16th International Symposium on High Performance Computing Systems and Applications (HPCS),* Moncton, Canada, June 2002.

**Efficient Tamper Detection for Mobile Code.** *U.S. Army Collaborative Technology Alliance Task Review*, Glenwood, MD, March 2002.

### Research Poster Presentations

Anteneh Addis Anteneh, Mike Jochen, Lori Pollock, and Lisa Marvel. **Establishing a Program Canonical Form at the Binary Level.** In *Mid-Atlantic Student Workshop on programming Languages and Systems (MASPLAS)*. April 2004.

Mike Jochen, Lisa Marvel, and Lori Pollock. **Zero Footprint Tamper Detection for Object Files.** In *Proceedings of the CTA C&N Annual Symposium*. April 2003.

Mike Jochen, Lisa Marvel, and Lori Pollock. **Mobile Code Security via Fragile Tamper Detection Marking.** In *Mid-Atlantic Student Workshop on programming Languages and Systems (MASPLAS)*. April 2001.

### Scholarly Service

#### Thesis Committee Member

East Stroudsburg University of Pennsylvania  
Computer Science Department

Served as a thesis committee member for the following graduate students:

- Michael Moynihan, *Discrete Cosine Transform (DCT) Steganalysis*, M.S., May 2008
- Adam Engle, *A Method to Detect LSB Steganography in a Digital Video Stream*, M.S., May 2008

#### Chair, Department Accreditation Committee

East Stroudsburg University of Pennsylvania  
Computer Science Department

September 2007–Present

Directly responsible for the planning, management, and implementation of the Computer Science Department's Accreditation Board for Engineering and Technology (ABET) accreditation process.

#### Member, Department Introductory

East Stroudsburg University of Pennsylvania

#### Curriculum Committee

September 2007–Present

Computer Science Department

Assist with redesigning the introductory course sequence for the Computer Science undergraduate degree.

#### Member, Department Science and Technology Building Equipment Committee

East Stroudsburg University of Pennsylvania

September 2007–May 2008

Computer Science Department

Assist with selecting new Department equipment for faculty and educational use in the new Science and Technology building.

#### Recording Secretary

East Stroudsburg University of Pennsylvania

September 2007–August 2008

Computer Science Department

Record and file minutes for Department Faculty meetings.

#### Small Group Discussion Facilitator

University of Delaware

July 2006

Workshop on Research Ethics

Served as a discussion facilitator for a undergraduate workshop on research ethics.

#### Senator

University of Delaware

Spring 2004–Spring 2005

Graduate Student Senate

Responsibilities included representing the department at monthly Senate meetings, addressing graduate student concerns within the department, and informing graduate students of Senate and University business.

**Journal Article Reviewer**

December 2004

Journal of Software Maintenance and Evolution

**Journal Article Reviewer**

May 2003

Journal of Systems and Software: Special issue on Reverse Engineering

**Graduate Student Panelist**

April 2003

University of Delaware  
Department of Computer and Information Sciences

Served as a student panelist to answer questions from an external departmental review board for the Department of Computer and Information Sciences.

**President**

Spring 2001–Fall 2003

Graduate Student Association  
Department of Computer and Information Sciences

Responsibilities included acting as a liaison between the department and graduate students, assisting new graduate students with orientation to the program, and organizing social events throughout the semester.

**Welcome and Orientation speaker**

Spring 2001–Fall 2003

University of Delaware  
Department of Computer and Information Sciences

Spoke at the Department New Graduate Student Orientation.

**Research Experience****Co-Investigator**

August 2008–Present

East Stroudsburg University of Pennsylvania  
Computer Science Department

Investigating the detection of digital steganography and digital watermarking for the National Institute of Justice funded project entitled “Supporting State and Local Law Enforcement in Cybercrime Investigations and Computer Forensics.”

**Co-Investigator**

August 2008–Present

East Stroudsburg University of Pennsylvania  
Computer Science Department

Developing learning opportunities for students through active research in the areas of cyber fraud, criminal investigations, and steganography. Developing and presenting short courses for law enforcement personnel to assist with criminal investigations that involve computers and computer networks.

**Research Assistant**

September 2000–Fall 2006

University of Delaware  
Department of Computer and Information Sciences

Supervised by Professor Lori Pollock and Dr. Lisa Marvel, this research focused on steganographic techniques to embed tamper detection information within a program and on techniques to control dynamic program transformations via formally specified policy. This research was funded by the National Science Foundation Grant No. CCR-0219559 and the U.S. Army Research Laboratory Collaborative Technology Alliance grant No. DAAD19-01-2-0011.

**Research Mentor**

June 2003–May 2005

University of Delaware  
Department of Computer and Information Sciences

Served as a mentor for Anteneh Addis Anteneh, a University of Delaware undergraduate Science and Engineering Scholar completing his senior honors thesis. Mr. Anteneh assisted with research on transformation control by implementing portions of work to support the research and assisting with the collection empirical data for use in evaluation of the project. Responsibilities included:

- Creating the goals and scope of the project
- Providing instruction on background material necessary to comprehend the project
- Meeting frequently (occasionally daily) to assist where needed and provide guidance for future

direction

- Providing feedback on the student's contributions and findings

#### **Research Mentor**

January 2003–February 2004

University of Delaware

Department of Computer and Information Sciences

Served as a mentor for University of Delaware undergraduate students Michael Brennan, a National Science Foundation Research Experience for Undergraduates student and Lewis Fishgold, a University of Delaware undergraduate Science and Engineering Scholar. Mr. Brennan and Mr. Fishgold assisted with research on detecting similarities in programs by conducting research on current techniques and implementing portions of work for the project. Responsibilities same as above.

#### **Research Assistant: *Computer Science Education***

Fall 1999

University of Delaware

Center for Teaching Effectiveness

Conducted research to design novel problem-based-learning assignments for an undergraduate parallel programming course. The resulting projects were used for the parallel programming course listed above. The experiences of this research and the course, were presented in the paper “Making Parallel Programming Accessible to Inexperienced Programmers through Cooperative Learning” listed above. Funded by the University of Delaware Center for Teaching Effectiveness Instructional Improvement Grant “Problem-based Learning in CIS: Prototype.”

#### **Service to the Nation/Community**

##### **Commissioned Officer**

8/2002–Present

Delaware Army National Guard

Wilmington, DE

Received a direct appointment as an officer in the U.S. Army Signal Corps. Served as Commander, Company A, 198<sup>th</sup> Integrated Theater Signal Battalion; Commander, Company A, 280<sup>th</sup> Signal Battalion; Platoon Leader, Company B, 280<sup>th</sup> Signal Battalion; Battalion Radio Officer, 198<sup>th</sup> Signal Battalion; and Brigade Automation Management Officer, 261<sup>st</sup> Theater Signal Brigade. Responsibilities include managing the engineering, installation, operation, and maintenance of tactical and commercial communication networks during combat, contingency, and peace-time operations.

##### **Noncommissioned Officer**

10/1986–8/2002

Delaware Army National Guard

Wilmington, DE

Attained rank of Staff Sergeant. Served as the principal percussionist, unit trainer, section leader, and unit combat life saver for the 287<sup>th</sup> Army Band.

#### **Honors and Awards**

**United States Army Bronze Star Medal**, 1 award for meritorious and outstanding achievement in a combat theater of operations, January 2006

University of Delaware Department of Computer and Information Sciences **Outstanding Teaching Assistant of the Year**, June 2000, (monetary award, one per year)

**United States Army Commendation Medal**, 5 awards for leadership, selfless service, expertise, and professionalism

**United States Army Achievement Medal**, 4 awards for outstanding service, leadership, and accomplishments

**Delaware National Guard Distinguished Service Medal**, 1 award

**Mortar Board National Honor Society**, 1990

**Golden Key National Honor Society**, 1987

**Professional Development****Fellow: HETC**

Summer 2006–Spring 2007

University of Delaware  
Center for Teaching Effectiveness

The University of Delaware Higher Education Teaching Certification Program is designed to provide a systematic preparation for all aspects of academic careers and to enhance the teaching effectiveness of teaching assistants. This program is centered around four courses on Pedagogy, Learning, Faculty Roles, and Academic Job Search. Additional activities include creation of the Teaching Portfolio, and a teaching observation/evaluation by a faculty mentor. Teaching certification is awarded upon completion of all program aspects. <http://cte.udel.edu/certificate.html>

**Fellow: ITUE**

Summer 1999

University of Delaware  
Inst. for Transforming Undergraduate Education

The University of Delaware Institute for Transforming Undergraduate Education promotes reform of undergraduate education through faculty development and course design. Institute Fellows receive hands-on experience in employing active learning strategies, particularly problem-based learning, and effective use of technology in their courses. <http://www.udel.edu/inst/>

**Professional Activities****Member, ACM**

2001–Present

Member of the Association for Computing Machinery (ACM) Special Interest Group on Computer Science Education (SIGCSE). <http://www.acm.org/>

**Member, IEEE**

2003–Present

Member of the Institute of Electrical and Electronics Engineers (IEEE) and the IEEE Computer Society. <http://www.computer.org/>

**Member, ARRL**

1996–Present

Member of the Amateur Radio Relay League (ARRL) and a licensed amateur radio operator, Call Sign: N3WQW). <http://www.arrl.org/>

**Lifetime Member, SCRA**

2003–Present

Lifetime member of the Signal Corps Regimental Association (SCRA). <http://www.signalcorps.org>

**Lifetime Member, NGAUS**

2002–Present

Lifetime member of the National Guard Association of the United States (NGAUS) and the National Guard Association of Delaware. <http://www.ngaus.org/>

**Lifetime Member, VFW**

2006–Present

Lifetime member of the Veterans of Foreign Wars (VFW). <http://www.vfw.org/>

**Personal Interests**

Music, Amateur Radio, Gardening, Long-distance Running, Photography, Sailing, and SCUBA Diving