Ming Chow
mchow@cs.tufts.edu

Education

Tufts University (Graduate School of Engineering) **Medford, MA 02155**
Master of Science in Computer Science (2004)

Tufts University (School of Engineering) **Medford, MA 02155**
Bachelor of Science in Computer Science (2002, Cum Laude)
Double-Majored in Computer Science and Mathematics

Research Interests

My research interests are in the areas of: game development, online game security, software security, Computer Science Education, and web application security.

Teaching Experience

Tufts University Department of Computer Science **Medford, MA 02155**
Lecturer

Spring 2008, Spring 2009, Summer 2009: Introduction to Game Development

- Switched to using the Lightweight Java Game Library (LWJGL) and the jMonkey Engine (jME) for 3D game development.
- Created new lectures on gaming security, OpenGL, and advanced 3D game development.
- Hosted Robocode tournament, a competition for students to build the best autonomous robot in Java.
- Course website available at http://www.cs.tufts.edu/comp/50GD

Middlesex Community College **Lowell, MA 01852**
Instructor

Spring 2008, Spring 2009: Cyber Security

- Taught classroom-based sessions for Middlesex Community College, who received a grant from the University of Pittsburgh Medical Center (UPMC) to offer the course. The course was part of the Community Preparedness Schoolhouse, which is a component of UPMC's Strategic Bio-Defense Emergency Operations and Communication System.
- Lectured on the goals of cyber security, laws and regulations, threats, vulnerabilities, information resources, and cyber security policy.
- Created basic demonstrations on password cracking, packet sniffing, scanning, and backdoors.

Tufts University Experimental College **Medford, MA 02155**
Instructor

Spring 2007: Security, Privacy, and Politics in the Computer Age

- Created new lectures on software security, regulatory compliance, digital forensics, and data security.
- Assigned two high-level security design projects.
- Demonstrated a digital investigation of a compromised web server using a virtual machine and Windows Sysinternals tools.
- Demonstrated vulnerable and insecure web applications written in PHP.

Spring 2006: Introduction to Game Development

- Lectured on various aspects of game development including: Java programming, 2D graphics, animation, user interaction, 3D graphics, modeling, game genres, and ethics in gaming.
- Placed students in teams to develop complex 2D games with design documentation.

Spring 2005: Security, Privacy, and Politics in the Computer Age

- Lectured on computer security, privacy, and political issues including: open source and free software, malware, spam, rootkits, buffer overflow, intrusion detection, reverse engineering of software, wireless and location-based privacy, and Radio Frequency Identification (RFID) tags.
- Assigned two debates and two expert panel sessions.
- Hosted a colloquium entitled "Building Privacy-Aware Applications" with guest speaker JC Cannon from Microsoft for the Tufts Department of Computer Science.

Presentations and Publications

- *Designing an Implementation-Based Game Development Course*. Game Education Summit, Carnegie Mellon University, Pittsburgh, PA, June 17, 2009.
- Ming Chow & Gary McGraw, editors. (2009) Securing Online Games, a special issue of *IEEE Security & Privacy*, Volume 7, Number 3, May/June 2009.
- *Internet Investigations 2.0: Privacy & New Technologies*. Greater Boston Chapter of the Association of Certified Fraud Examiners (ACFE), Boston, MA, September 19, 2008.
- *Use of the Internet in Fraud Investigations*
    - International Association of Law Enforcement Intelligence Analysts (IALEIA) - New England Chapter, Franklin, MA, October 3, 2008.
    - New England Association of Insurance Fraud Investigators (NEAIFI) 3rd Annual Training, Westford, MA, June 11, 2008.
    - John Hancock, Boston, MA, October 24, 2007.
    - Greater Boston Chapter of the Association of Certified Fraud Examiners (ACFE), Boston, MA, September 21, 2007.
- *Q&A Regarding Using the Internet for Investigations*. New England International Association of Special Investigation Units (NEIASIU), Westborough, MA, March 14, 2008.
- *Joint Educational Initiatives to Address Cybercrime Incident Response.* High Technology Crime Investigation Association - New England Chapter (HTCIA-NE), Boston, MA, August 9, 2007.
- *Google: The Search Engine and Its Tools*. New England Association of Insurance Fraud Investigators (NEAIFI) 2nd Annual Training, Westford, MA, June 13, 2007.
- "Teaching Computer Security, Privacy and Politics to the Masses," *;login: The Magazine of USENIX & Sage*, vol. 30, no. 6, pp. 62-63, December 2005.
- *What is Outstanding in Your Security and Compliance Practice?* Northeast Regional Computing Program (NERCOMP) Workshop: Achieving Optimal Security and Compliance in Higher Education, University of Massachusetts Amherst, November 14, 2005.

Advisees

- Alexander Levy, Spring 2008, Plan of Study Honors Thesis: *Video Game Graphics: A Synthesis of Visual Culture and Computer Technology*

Professional Experience

Harvard University Department of Environmental Health & Safety (EH&S) **Cambridge, MA 02139**
Program Support Specialist, Spring 2004 - Present

- Co-invented contractor assessment process, a cost-effective and efficient method to pre-qualify contractors and sub-contractors for safety performance. U.S. Patent Application No.12/271,128 filed on November 14, 2008, and granted IP to University. See http://www.techtransfer.harvard.edu/inventions/startupventures/examples/ for more information.
- Designed and developed web application for tracking asbestos waste shipment records for construction projects at the University. System allows the University to track regulatory compliance dates and ensure that all asbestos waste is being disposed of at Harvard approved disposal sites in an appropriate manner and timeframe.
- Redeveloped the Harvard EH&S Training Management System and business process to better manage the training requirements for over 12,000 Harvard personnel. Led a team of two developers to complete the web application. Implemented training assessment form, training action plan, and migration of training records to PeopleSoft.
- Developing two web applications with the Harvard Office of Sustainability (OFS) to track greenhouse gas emissions and the return on investment of energy efficiency projects at the University.
- 2006 Harvard Heroes honoree: for leadership, teamwork, adaptability, and work that set new standards for performance at Harvard University.

- Spearheaded the redesign of the University Operations Services (UOS) service organization website that receives over 20,000 unique visitors per month; redesigned UOS website was rolled-out in June 2008.
- Coordinated the migration of 45,000 Social Security Numbers to an alternative form of ID in the EH&S Radiation Protection Office's electronic recordkeeping system and in all Harvard accounts managed by vendor Landauer, Inc., in compliance with the Harvard University Enterprise Security Policy.
- Performed a risk analysis and mitigation strategy for the EH&S Radiation Protection Office's electronic recordkeeping system.
- Developed the Harvard EH&S Daytime and After-Hours On-Call web application to coordinate weekly emergency responders for the EH&S department and the Harvard University Operations Center.
- Initiated and maintained technology communications to the department including quarterly newsletters, web analytics, and security updates.

Harvard University Department of Environmental Health & Safety (EH&S) **Cambridge, MA 02139**
Information Technology Support Associate, Summer 2002 - Spring 2004

- Designed a central Oracle database architecture for the department. Use of the database architecture has expanded to the University Operations Services (UOS) service organization.
- Led the full life-cycle development of two web applications to manage over 2,000 confined spaces and facility equipments (e.g., boilers, generators) at the University for regulatory compliance.
- Developed an access control web application to manage over 400 users at the University for the central Oracle database and its web applications.
- Trained department staff members on the fundamentals of computer security and on emerging technologies.
- Awarded third place in the 2003 Campus Safety Health and Environmental Management Association (part of the National Safety Council) Home Page Contest.

Harvard University Department of Environmental Health & Safety (EH&S) **Cambridge, MA 02139**
Technology Support Intern, Spring 2000 - Summer 2002

- Developed the Hazardous Waste Online Pickup Request / Services application to manage hazardous waste pickup requests, supply requests, and technical assistance. Over 200 requests are submitted per month from the laboratories at Harvard. Saved the department the cost of one full-time staff assistant.
- Developed the first homegrown web application in the department, the Hazardous Waste Labeling Reference Tool to mitigate the most cited hazardous waste violation of mislabeling hazardous waste containers. This tool is still currently in use with the same architecture and receives over 200 queries a month.
- Webmaster of the Harvard EH&S website.

Tufts University Department of Electrical Engineering and Computer Science **Medford, MA 02155**
Teaching Assistant for Computer Science 15: Data Structures, Fall 1999 - Fall 2000, Fall 2002 - Spring 2003

- Assisted students in implementing large programming assignments in C++.
- Led review sessions for assignments and examinations.
- Graded assignments and examinations.

Lycos, Inc., **Waltham, MA 02451**
Summer Intern for the Lycos Quality Assurance Team, Summer 1999

- Ran automated test tools to scan for defects on the Lycos web site.
- Compared the website against competing sites on usability, layout and design, and consistency of information.
- Designed test plans for Lycos' gaming portal and safe search engine.

Certifications

- SANS / GIAC Certified Incident Handler (GCIH)

Skills

- *Languages:* strong knowledge of Java, PHP, Perl, and HTML; working knowledge of C/C++ and JavaScript; basic knowledge of Python and Ruby
- *Databases:* MySQL, Oracle
- *Technologies:* AJAX, Apache Struts Framework, Google Maps API, JavaServer Pages (JSP), jQuery, OpenGL, XML

- *Security Software:* Ettercap, John the Ripper, Nessus, Nikto, nmap, Paros, Snort, TrueCrypt, Wireshark

Professional Affiliations

- High Technology Crime Investigation Association (HTCIA)