

**Benjamin Vandiver**  
101 Orient Ave, Arlington, MA 02474  
(617) 290-8203 benmv@mit.edu

## Curriculum Vitae

### EDUCATION

- Ph.D., Computer Science** **June 2008 (expected)**  
*“Detecting and Tolerating Byzantine Faults in Database Systems”*  
Massachusetts Institute of Technology
- M.Eng., Electrical Engineering and Computer Science** **June 2002**  
*“Compilation to a Queue-Based Architecture”*  
Massachusetts Institute of Technology
- B.S., Computer Science and Engineering** **June 2001**  
Massachusetts Institute of Technology

### RESEARCH EXPERIENCE

**Research Assistant** **January 2005-Present**  
Programming Methodology Group (Barbara Liskov)  
Computer Science and Artificial Intelligence Lab, MIT

- Investigated tolerating Byzantine faults in databases while retaining reasonable performance
- Applied the above mechanic to finding bugs in real database systems
- Supervised undergraduate student research

**Research Assistant** **June-August 2003**  
Robotics Lab (Jill Crisman & Gill Pratt)  
Franklin W. Olin College of Engineering

- Developed software libraries for interfacing with robot drive and vision systems.
- Helped guide undergraduate students working in this lab.

**Research Assistant** **September 2001-June 2002**  
Project ARIES (Tom Knight),  
Artificial Intelligence Laboratory, MIT

- Assisted in the high-level design of a novel supercomputing architecture.
- Implemented a compiler for the architecture which required elucidating new calling conventions and other programming mechanics necessary for compilation to the new environment.
- Designed an original parallel programming language with first-class streaming constructs which capitalized on the streaming nature of the architecture.

## TEACHING EXPERIENCE

**Head Teaching Assistant, Computer Systems Engineering (6.033)** **Spring 2007**  
EECS Department, Massachusetts Institute of Technology

- Directed and counseled the 5 other TAs in lesson plans, teaching techniques, grading, and other logistics
- Assisted the lecturer with quiz and paper development, as well as general course logistics

**Instructor, Building Programming Experience (6.090)** **January 2005**  
EECS Department, Massachusetts Institute of Technology

- Identified, designed, and developed the curriculum of an introductory programming class for those without any prior programming background. The class serves as a lead in to the department introductory computer science class. Published course materials in MIT OpenCourseWare.
- Delivered the material to a class of 30 students through lectures, projects, and an exam.
- Managed a set of lab assistants, while encouraging them to develop their own teaching abilities.

**Recitation Instructor, Introductory Computer Science (6.001)** **Spring 2004**  
EECS Department, Massachusetts Institute of Technology

- Taught 2 sections of 30 students twice a week that covered introductory programming in Scheme and basic principles of computer science.
- Assisted the head professor by writing programming projects, authoring quizzes, and developing the object oriented curriculum.
- Developed a set of recitation notes that have been used as a reference for subsequent recitation instructors.

**Teaching Assistant, Programming Interactively** **Spring 2003**  
Franklin W. Olin College of Engineering

- Assisted in content delivery of introductory programming in Java to a class of 20 students.
- Authored programming projects on object oriented programming, threading, synchronization, and networking.

**Teaching Assistant, Engineering, Modeling, and Control** **Fall 2002**  
Franklin W. Olin College of Engineering

- Assisted in the development and delivery of labs which covered mathematical modeling and computer control of exterior systems.
- Taught 75 students C and MATLAB.

**Head Teaching Assistant, 6.001** **F2004,F2003,S2002,F2001,S2001**  
EECS Department, Massachusetts Institute of Technology

- Assisted the head professor with course planning and execution for class sizes of 150-400 students.
- Managed 7 other TAs to ensure consistency and quality.
- Designed and developed student programming projects.
- Taught weekly tutorials in groups of 5-6 for 40 students.
- Graded student programming projects and quizzes.
- Student evaluations averaged 6.6/7.0

**ESG 6.001 Liaison****Spring 2001**

EECS Department, Massachusetts Institute of Technology

- Initiated a joint program between 6.001 and the Experimental Studies Group (ESG). Coordinated 4 undergraduate instructors and taught recitations for their students.
- The program ran through 2005, with my occasional assistance.

**Teaching Assistant, 6.001****Fall 2001, Fall 2004**

EECS Department, Massachusetts Institute of Technology

- Taught weekly tutorials in groups of 5-6 for 40 students.
- Graded student programming projects and quizzes.

**TECHNICAL EXPERIENCE****Student Technology Consultants****January 2000 - September 2001**

Edgerton Center, Massachusetts Institute of Technology

- Helped found the MIT student consulting group.
- Designed, implemented, and maintained the central tracking website powered by Oracle.

**Web Software Developer****6/1998-8/1998 and 6/1999-8/1999**

WorldStreet, Inc. Somerville, MA

- Led a team of software developers building a database-backed website.

**TECHNICAL SKILLS**

Fields: Compilers, Operating Systems, Databases, Distributed Systems

Programming Languages: Java, Scheme, C, Python, PHP, lex, yacc, SQL, JSP, HTML

Software: Office, Matlab, Databases (Oracle, MySQL, PostgreSQL), Operating Systems (Windows, Unix-flavors)

**PUBLICATIONS AND PRESENTATIONS**

- Ben Vandiver. Compilation to a queue-based architecture. Master's thesis, Massachusetts Institute of Technology, May 2002.
- Ben Vandiver. Building programming experience: A lead-in to 6.001. MIT OpenCourseWare, April 2005.
- Ben Vandiver, Hari Balakrishnan, Barbara Liskov, and Sam Madden. Tolerating byzantine faults in database systems using commit barrier scheduling. In *Proceedings of the 21st ACM Symposium on Operating Systems Principles (SOSP)*, Stevenson, Washington, USA, October 2007.
- Ben Vandiver, Andrew "bunnie" Huang. Compilation to the Q-Machine. Talk in the MIT Computer Architecture Series, October 2001. Boston, Massachusetts.

## **EXTRACURRICULAR ACTIVITIES AND HONORS**

Fencing and Sport Weapon Instructor at Guard Up, Inc., September 2004-2006

- Taught introductory foil and sport weapon to small groups of students whose ages vary from high school to 50+.

Founding coach of the Olin Fencing Club, Spring 2003

Member of the MIT Varsity Fencing Team 1996-2000

The Goodwin Medal, “for conspicuously effective teaching,” MIT 2005

Carlton E. Tucker Teaching Award, MIT, Spring 2002

MIT Straight “T” Award, Men’s Fencing, May 2000

## **REFERENCES**

Available upon request.