

# Dr. Joseph T. Foley

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## Professional

Mechanical Design, Radio Frequency Identification, Manufacturing Design and Process Control, Computer Automation, Distributed System Design, Network Administration and Security, Distributed System Design, High-Availability and Backup Systems, Database Applications.

## Interests

Robotics, Automatic Identification and Information Collection, Wireless Communications, Computer Instrument Interfaces, Digital Design, Home Automation.

## Education

Bachelor in Computer Science and Electrical Engineering (MIT, June 1999)

*"Low-cost Automated Pine-Car Derby System"*

Master of Engineering in Computer Science and Electrical Engineering (MIT, June 1999)

*"An Infrastructure for Electromechanical Appliances on the Internet"*

MIT Doctorate of Philosophy in Mechanical Engineering (MIT, February 2007)

*"Security Approaches for Radio Frequency Identification Systems"*

## Experience

Software Engineer, Government & Industrial Division

*June 2007 – present*

Developing new hardware platforms for the iRobot PackBot.

**iRobot Corporation**

Burlington, MA

Post-Doctoral Associate

*October 2006 – October 2007*

Analyst for energy efficiency in industrial applications. Building models for energy calculations and product design to reduce energy utilization and generation of pollutants.

**Massachusetts Institute of Technology**

Cambridge, MA

Graduate Research Assistant

*September 1999 – October 2006*

Researcher for Professor Sanjay Sarma in the MIT AutoID Labs.

Designed and implemented demonstrations of AutoID technology in Cambridge, UK Exposition.

Focused on research into Internet-enabled RFID Privacy and Security.

**Massachusetts Institute of Technology**

Cambridge, MA

Teaching Faculty

*September 2005 – January 2006*

Teaching Assistant for CSCI-E-170: Computer Security and Privacy.

**Harvard Extension School**

Cambridge, MA

Consultant

*January 2004 – May 2004*

Designed prototype of website for Uffinity: a University/career based social-networking website.

**Uffinity**

Cambridge, MA

Consultant

*February 2000 – June 2001*

Consulted on manufacturing M3/M5 Tactical Illuminator as part of graduate manufacturing coursework (2.810). Focus was on increasing part quality and throughput using Japanese manufacturing techniques.

**Insight Technologies**

Londonderry, NH

Software Developer and Network Administrator

*June 1999 – Sept 1999*

Developed world's largest fully-indexed Quote Database.

Developed and Installed Network Security Policies and Equipment.

**Emode, Inc.**

Cambridge, MA

Lead Mechanical Designer  
*July 1998 – September 1998*

**Brute Force Games**  
Cambridge, MA

Designed full immersion game simulator mechanical platform leveraging MIT Aero-Astro vection research.

Network Programmer  
*June 1996 – September 2000*

**MIT Information Systems**  
Cambridge, MA

Development of network event paging system (Information Systems Network Operations).  
Intrusion and packet-sniffer detection (Information Systems Network Security).

Lab Assistant

**MIT Department of Electrical Engineering  
and Computer Science**  
Cambridge, MA

*January 1996 – May 1997*

6.004 (Computation Structures) in the MIT EECS Department. Instructed students how to build a DEC Beta architecture from LS logic and assisted with debugging.

Researcher

**Massachusetts Institute of Technology**  
Cambridge, MA

*September 1995 - August 1996*

The Invention Group under Professor Alex Slocum (Mech E) focused on simple innovative ideas for existing problems. Focused on developing a low-cost after-market shock absorber for bicycles. Also developed an electronic Mancala game.

Network and Computer Administrator

**Brooks Automation**

*March 1994 - August 1995*

Lowell, MA

Network Installation: Analysis, Design, Upgrading/Installing.  
Computer Equipment Service: Software and Hardware Repair/Administration/Migration.

Hardware Interface Programmer

**University of Massachusetts, Lowell**

*October 1993 - February 1994*

Lowell, MA

Programming HP-GPIB interface to network the Solar Cell Research Lab's instruments (microammeter, multimeter, etc.) together. This was used to collect, organize and analyze solar cell performance data.

## Background

High school: Salutatorian, 1994, Salem High School, Salem, NH.; also chosen as Rensselaer Medalist, Bausch and Lomb Scholar, Tandy Technology Scholar, Dollars for Scholars and Admiral C. Byrd Scholarship winner.

## Hobbies

Martial Arts, Firearms (MA State Safety Instructor, NRA Certified Coach), Archery (NAA Level 2 Instructor), SCUBA (Rescue Diver), Live Action Roleplaying, Eastern Square Dancing(C1), MA EMT-B, Photography, Public Service (APO), HAM Radio (Tech Plus), Science Fiction, Locksmithing & Security Systems, Tinkering

## Skills

*Computer languages:* C(++), Perl, PHP, Java, XML, lexx, SQL, PICASM

*UN\_X/Media development tools:* HTML/CGI, L<sup>A</sup>T<sub>E</sub>X, PostScript, sh, CVS/Subversion, Kerberos

*Technician:* IPC Class 2 Soldering, Locksmithing, Telephone/Network Cable Wiring

*Mech E Tools:* Matlab, Maple, ProEngineer, SolidWorks, CNC Machining

*Digital System Design:* Logic Analyzer, Serial Protocol Analyzer, Controller Simulators