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" US Patent 7,765,253
MIT Doctorate of Philosophy in Mechanical Engineering (MIT, February 2007)
"Security Approaches for Radio Frequency Identification Systems"

Experience

Consultant — **Foley Consulting**
September 2010 – Current — Salem, NH USA & Reykjavik, Iceland
Finite Element Analysis of advanced structural composites used to develop a high speed quadraped robot in Professor Sangbae Kim's Bioinspired Robotics Laboritory.

Senior Research Scientist, Government & Industrial Research Division — **iRobot Corporation**
November 2007 – August 2010 — Bedford, MA
Creating and implementing mechanical designs for robot platforms. Tech lead for DARPA DSO ChemBots project. Software developer on DARPA NOSTRA project.

Post-Doctoral Associate — **Massachusetts Institute of Technology**
October 2006 – October 2007 — Cambridge, MA
Analyst for energy efficiency in industrial applications. Building models for energy calculations and product design to reduce energy utilization and generation of pollutants.

Graduate Research Assistant — **Massachusetts Institute of Technology**
September 1999 – October 2006 — Cambridge, MA
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.

Teaching Faculty — **Harvard Extension School**
September 2005 – January 2006 — Cambridge, MA
Teaching Assistant for CSCI-E-170: Computer Security and Privacy.

Consultant — **Uffinity**
January 2004 – May 2004 — Cambridge, MA
Designed prototype of website for Uffinity: a University/career based social-networking website.

Consultant — **Insight Technologies**
February 2000 – June 2001 — Londonderry, NH

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.

Software Developer and Network Administrator **Emode, Inc.**
June 1999 – Sept 1999 Cambridge, MA
Developed world's largest fully-indexed Quote Database.
Developed and installed network security policies and equipment.

Lead Mechanical Designer **Brute Force Games**
July 1998 – September 1998 Cambridge, MA
Designed full immersion game simulator mechanical platform leveraging MIT Aero-Astro vection research.

Network Programmer **MIT Information Systems**
June 1996 – September 2000 Cambridge, MA
Development of network event paging system (Network Operations). Implemented intrusion and packet-sniffer detection (Network Security). Created DNS configuration parser/checker.

Residential Computing Consultant **MIT Information Systems**
September 1995 – September 2000 Cambridge, MA
Assisted students with network connectivity and access to computing resources in dormitories.

Computer Cluster Sysadmin **MIT Experimental Study Group**
September 1995 – June 1995 Cambridge, MA
Maintained and upgraded Athena cluster hardware: Solaris, Irix, AIX, and Linux. Maintained computer teaching services, backups, and printers.

Lab Assistant **MIT Department of Electrical Engineering and Computer Science**
January 1996 – May 1997 Cambridge, MA
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**
September 1995 - August 1996 Cambridge, MA
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.

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, Music(Cello, Piano, Fiddle), Public Service (APO), HAM Radio (Tech Plus), Locksmithing & Security

Skills

Project Management: 8D, Total Project Control, Toyoda Manufacturing Methods
Computer languages: C(++), Perl, Python, PHP, Java, XML, lexx, SQL, PICASM
UN_X/Media development tools: HTML/CGI, LaTeX, PostScript, sh, CVS/Subversion, Kerberos
Technician: IPC Class 2 Soldering, Locksmithing, Telephone/Network Cable Wiring
Mech E Tools: Matlab, Maple, ProEngineer, Windchill, SolidWorks, CFDesigner, Rapid Prototyping, CNC Machining
Digital System Design: Logic Analyzer, Serial Protocol Analyzer, Controller Simulators