

- Objectives:** To develop technologies that enhance the generation-defining human-computer symbiosis.
To expand our understanding of the human mind and multiple intelligences.
To build biological or microelectronic computers to help regulate brain activity in patients with severe mental conditions like Parkinson's, Alzheimer's, and drug addiction.
To secure a position in a progressive company or institution that will allow me to continue in my research.
To learn as much as possible through diverse, challenging, and stimulating experiences.
- Education:** **Massachusetts Institute of Technology** Cambridge, MA
Graduate GPA: 4.9/5.0 September 2009
Master of Engineering Degree in Electrical Engineering and Computer Science
Coursework: Mathematics for Engineers I, Biological Instrumentation and Measurement II, User Interface Design and Implementation, Intelligent Multimodal User Interfaces
Seminars: Computational Photography
- Massachusetts Institute of Technology** Cambridge, MA
Undergrad GPA: 4.2/5.0 June 2006
Bachelor of Science in Electrical Engineering and Computer Science. Minor in Biomedical Engineering
Coursework: Structure & Interpretation of Computer Programs, Artificial Intelligence, Circuits & Electronics, Signals & Systems, Computation Structures, Mechanics & Materials I, Modeling Dynamics & Control, Japanese (4 terms), Solid State;Organic;Bio-Chemistry, Quantitative Physiology: Cells and Tissues, Quantitative Physiology: Organ Transport Systems, Systems Pharmacology and Toxicity, Biochemistry and Pharmacology of Synaptic Transmission, Bioelectronics Project Lab
Seminars: Computational Cognitive Science, Biotechnology Entrepreneurship, Moral Reasoning
- Egg Harbor Township High School** Egg Harbor Twp., NJ
GPA: 3.96/4.00 (unweighted) Rank: 3 of ~350 June 2002
- Governor's School of Engineering and Technology** New Brunswick, NJ
Summer Program at Rutgers University July 2001
- Participated in a ~10 person research group on the fiber optics draw tower process
 - Designed and implemented modifications to improve efficiency of a non-oxide draw tower furnace
 - Collaborated in final presentation of material
 - Relevant courses include: MATLAB, Information Technology: PHP and MySQL, Statics, Linear Algebra
- Research:** **MIT Media Laboratory, Camera Culture Group** Cambridge, MA
Graduate Research Assistant January 2009 – October 2009
- MIT Biomolecular Materials Laboratory** Cambridge, MA
Graduate Research Assistant December 2005 – May 2006
- Learned to culture e.coli and propagate M13 bacteriophage libraries
 - Assisted in phage selection to find a virus that binds to iron oxide nanoparticles
 - Researched and reported on the potential for phage-based psychotherapeutic agents
- MIT Dept. Brain and Cognitive Sci. and Boston Children's Hospital** Cambridge, MA
Research Assistant December 2005 – May 2006
- Worked with Tobii® eye-tracking technology to develop software for developmental vision research
 - Developed a Microsoft® .NET-compatible COM object to act as a MATLAB-Tobii® proxy
 - Designed software to enable creation of real-time sideshows contingent upon tracker data
- MIT Media Lab, Responsive Environments Group** Cambridge, MA
Research Assistant March 2004 – January 2005
- Worked with distributed sensor networks as a sensate skin in the TRIBBLE
 - Developed software for musically-based, intelligent, responsive interface
 - Demonstrated concepts of distributed neural communication and processing
- Employment:** **FDO Partners LLC** Cambridge, MA
Research Associate October 2009 – December 2010

- Designed and implemented reporting framework to organize and display data about worldwide equities trading
- Collaborated on a large software engineering project for automated multi-book low-frequency equities trading
- Created PostgreSQL databases and tables, using views and scripts to create abstractions for DB manipulation

Microsoft Research

Cambridge, UK

Research Intern

July 2009 – October 2009

- Developed optical system for 6 degree of freedom tracking of an object on and above a display surface
- Designed and fabricated multiple prototypes of next-generation optical pen user interface
- Programmed DSP-enhanced “Smart Camera” for real-time tracking and decoding of datamatrix codes
- Conducted significant background research on the history and impact of user interfaces for computing

Talking Lights LLC

Boston, MA

Senior Design Engineer

April 2007 – January 2009

- Built, programmed, and debugged location-aware mesh networked devices
- Designed and implemented user interfaces targeting health care workers
- Coordinated real-world studies of our systems
 - Guidance of brain injury patients at Spaulding Rehabilitation Center
 - Minding of (safety monitor for) Alzheimer's patients at Hearthstone Residence
- Maintained company wiki and automated backups of documentation and code
- Designed and prototyped potential products for security, emergency response, and communications

MIT Computer Science and Artificial Intelligence Laboratory

Cambridge, MA

Teaching Assistant for 6.004: Computation Structures

August 2006 – January 2007

- Maintained course website, updated weekly announcements, participated in evaluations of student performance
- Wrote lesson plans and instructed two groups of ~15 students in two (50min) sections a week
- Held 10 lab-hours a week for students to obtain additional assistance on projects and exam preparations.
- Course Topics can be viewed at: <http://6004.csail.mit.edu/currentsemester/description.htm>

MGH/Harvard Martinos Center for Biomedical Imaging

Charlestown, MA

Clinical Engineer for Neurological Research

May 2006 – November 2009

- Used MATLAB with Psychtoolbox to implement customizable scripts for visual and auditory stimuli
- Developed software that generates stimuli and triggers recording for each random instance
- All stimuli and devices used in magnetoencephalography-based autism research

Advanced Telecommunications Research Institute

Kyoto, Japan

Intern at the Intelligent Robotics and Communications Labs

May 2005 – August 2005

- Designed and implemented interface in C to wearable “B-pack” units on an ARM-Linux-based platform
- Developed protocols over UDP and TCP for data collection/preprocessing for hospital applications
- Provided full-system time-synchronization, and the base system for localization functionality
- Helped write and edit published material.

MIT Microsystems Technology Laboratories

Cambridge, MA

Systems Administrator

June 2003 – August 2003

- Administered approximately 300 Unix, Linux, Windows, and Macintosh machines
- Revised and enhanced systems administration programs/scripts/documentation to expedite repair & installation
- Organized and executed large scale data collection in order to update machine and accounting databases
- Deployed lab-wide security patches, backups, and updates under time constraints

Self-Employed

E.H.T., NJ and Boston, MA

Independent Computer Consultant

December 1999 – Present

- Instructed individuals and small groups in use of software and hardware
- Pinpointed clients' needs and developed software for use in medical transcription and clinical research
- Clients have included: New Institutional Service Company, Atlantic Gastroenterology, Atlantic Prevention Resources, Massachusetts General Hospital Department of Neurological Research

Computer Skills: Python, Java, C/C++, Scheme, GTK, jQuery, LAMP, .NET, AS/Flex, R, MATLAB, Adobe CS/Photoshop

Other Skills/Interests: Microcontrollers, Japanese Language, Lighting Design/Control, Optics, Deus Ex Machina, Stage Acting

Leadership Positions: MIT International Science and Technology Initiatives: MIT-Japan Ambassador
Tau Epsilon Phi, Xi Chapter: Treasurer, Chancellor

Awards/Certification: IT Certification from Rutgers, Masonic Grant, Avoda Award, Harry Gessner Memorial Award for EECS