# Brian D. Mayton

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## ❖ EDUCATION

- *In progress*: Massachusetts Institute of Technology – M.S. in Media Arts and Sciences (expected May 2012)
- University of Washington, Seattle – B.S. in Computer Engineering, Hardware Specialization, June 2008

## ❖ PROFESSIONAL AND RESEARCH EXPERIENCE

**Research Assistant, MIT Media Lab — 2010-present**

- Currently researching sensor systems and context- and location-aware embedded computing in the Responsive Environments research group.

**Research Assistant, Intel Research Seattle — 2008-2010**

- Designed, constructed, and installed electric field sensor boards in the fingers of a robotic hand.
- Wrote software to utilize electric field sensors to improve robotic manipulation of objects in uncertain environments.
- Researched the use of electric field sensors to create three-dimensional models of unknown objects for use in grasp planning and collision avoidance.
- Demonstrated the electric field sensing robot at Intel Developer Forum keynotes in San Francisco and Taipei, Taiwan, and at the CeBIT 2009 opening ceremony in Hannover, Germany.

**Embedded Systems Engineer, University of Washington — 2008-2009**

- Taught lab sections for the Software for Embedded Systems course.
- Developed new lab assignments, including a new electric field sensing board design.

**Teaching Assistant, Software for Embedded Systems, University of Washington — 2007-2008**
Department of Computer Science and Engineering, Hardware and Embedded Systems Lab

- Provided instruction to students constructing microcontroller circuits and programming embedded devices in assembly language and in C on the AVR and XScale platforms.
- Designed new labs to introduce electric field sensing, including a new expansion board for the iMote 2 to provide electric field sensing capability.

## ❖ ADDITIONAL SKILLS

- Microcontroller and embedded systems development experience with Atmel AVR, AVR32, Microchip PIC, and ARM microprocessors.
- Rapid prototyping, including laser cutting, machining, 3D printing, and waterjet cutting.
- Printed circuit board design experience using Altium.
- Proficient soldering skills, including QFN, BGA, and 0402 surface-mount components.
- Computer-aided design skills using SolidWorks and AutoCAD.
- Extensive experience with wireless sensor networks.
- Experience with FPGA development using Verilog, Active-HDL, and Synplify Pro.
- Linux kernel and driver programming experience.
- C, C++, Java, and Python software development experience.
- Proficiency with XHTML, PHP, JavaScript, and MySQL for interactive web design.

## ❖ PUBLICATIONS

- Matuszek, C., Mayton, B., etl al. 2011. "Gambit: An Autonomous Chess-Playing Robotic System." In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA),* 2011.
- Mayton, B., LeGrand, L., and Smith, J. 2009. "Robot, Feed Thyself: Plugging In to Unmodified Electrical Outlets by Sensing Emitted AC Electric Fields." In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA),* 2009.
- Mayton, B., LeGrand, L., and Smith, J. 2009. "An Electric Field Pretouch System for Grasping and Co-Manipulation." In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA),* 2009.
- Borriello, G., Hartung, C., Hemingway, B., Koscher, K., and Mayton, B. 2008. "Multi-player soccer and wireless embedded systems." In *Proceedings of the 39th SIGCSE Technical Symposium on Computer Science Education* (Portland, OR, USA, March 12 - 15, 2008). SIGCSE '08. ACM, New York, NY, 82-86.