William C. Martin

The Robotics Institute
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Research Interests

Mobile robotics, focusing on biomechanical locomotion, sensor design, modeling, and simulation.

Education

Carnegie Mellon University — Pittsburgh, PA
Ph.D., Robotics — *August 2012 - Present*
Advisor: Hartmut Geyer

Middlebury College — Middlebury, VT
B.A., Physics and Computer Science, Magna Cum Laude (GPA: 3.78) — *February 2012*

Experience

MIT Lincoln Laboratory — Lexington, MA
Intelligence, Surveillance, Reconnaissance - Systems and Architectures — *Jun. 2012 - Aug. 2012*

- Designed and implemented a hyperspectral video system for real time capture and analysis.
- Developed software in C++ to merge hyperspectral detection maps with normal video.
- Optimized spectral signature detection code to improve the hyperspectral frame rate.

Jet Propulsion Laboratory — Pasadena, CA
Mobility and Robotic Systems — *Jun. 2011 - Aug. 2011*

- Part of the All-Terrain Hex-Limbed Extra-Terrestrial Explorer (ATHLETE) robotics team.
- Designed and fabricated high-power electronics to imitate attitude control thrusters.
- Developed software to simulate ATHLETE's motion on and around a near-earth asteroid.
- Integrated the simulation software with an 8 meter high inverted Stewart platform that manipulates the position and orientation of ATHLETE.

International Business Machines — Research Triangle Park, NC
Network Operating Systems, Co-op — *May 2010 - Dec. 2010*

- Created an automated system provisioning application to minimize environment setup time.
- Worked heavily with VMware ESX to create benchmarking systems and virtual test environments.
- Developed network storage solutions for intensive I/O testing.
- Investigated software bugs within the Solaris operating system on IBM System X servers.
- Organized and maintained internal Linux repositories used for distribution and installation.

Appstone Inc. — Middlebury, VT
Software Engineer — *May 2009 - Aug. 2009*

- Designed, developed and deployed a Ruby on Rails application for crowdsource based freelancing.
- Worked closely with a team of engineers to manage workflow and meet deadlines.
- Focused on creating and maintaining a startup web company for profit and self sustainability.

Harvard School of Engineering and Applied Sciences — Cambridge, MA
Westervelt Lab, REU Intern — *May 2008 - Aug. 2008*

- Researched and designed a portable, low-cost immunoassay device for use in developing nations.
- Worked in a clean room to successfully create a capacitive sensing device using photolithography.

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Skills

Languages:	C++, C, Java, Python, Ruby, BASH, PHP, LISP, x86_64 Assembly, LaTeX
Web:	HTML, CSS, JavaScript, jQuery, MySQL, Ruby on Rails, Django
OS:	Linux (Debian, Redhat, SUSE), UNIX (BSD, Solaris), OS X, VMware, Windows
Networking:	Fibre Channel, IPMI, Network storage, PXE booting, Serial Over LAN
Electronics:	Arduino platforms, Audio generation, High-power LEDs, Microcontrollers, Mobile robots, Motor and sensor control, RS-232/485, Surface mount & through hole PCB assembly
Lab:	Digital multimeter, Function generator, Network analyzer, Oscilloscope, Photolithography, SEM, Spectrometer, Thermal evaporator
Tools:	Belt sander, Dremel, Drill press, Hole saw, Jigsaw, Lapping block, Laser cutter, Rapid prototyping (FDM & SLS), Soldering, Torch, Thread tap
Software:	AutoCAD, Blender, Boost, Bug Tracking, Bullet Physics, Cobbler, EAGLE, FLTK, IGOR Pro, Irrlicht, LogicWorks, MATLAB, Mathematica, Maxwell 3D, Multisim, Photoshop, PCB design, Qt, Simulink, SolidWorks, Version control (SVN & Git), VI

Interests & Activities

Lab Teaching Assistant:	Electricity and Magnetism, Electronics
Electronics:	Sensors, μ-controllers, LED lighting systems, PCs, Servers
Mechanics:	Biologically inspired design, Robot locomotion
Programming:	Embedded, ACM Competitions, Web & video game development
Radio show host:	Middlebury College Radio, 2009-2011
Oboist:	Middlebury College Orchestra, 2007-2009

Awards

- First Place, Lincoln Labs "XTEC" Team Award, 2012
- National Science Foundation Graduate Research Fellowship Honorable Mention, 2012
- Robert K. Gould Prize in physics, 2012
- Middlebury College Scholar
- Robert C. Byrd Honors Scholarship, 2007
- First and Best of Category - Intel International Science and Engineering Fair, 2007
- Main-belt asteroid name - 23172 Williamartin