

# Mathew P. DeDonato

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## EDUCATION:

**Worcester Polytechnic Institute**, Worcester, MA: August 2012 – May 2013  
Masters of Science in Robotic Engineering (3.7 GPA)

- Capstone Project – NASA Sample Return Robot Challenge: Spring 2013
  - Developed vision-based sample recognition and retrieval for autonomous rovers
  - Assisted in managing 5 robotics engineers to complete the project

**Worcester Polytechnic Institute**, Worcester, MA: August 2005 – May 2009  
Bachelor of Science in Robotic Engineering

- Interactive Qualifying Project–Science Museum London: Summer 2007
  - Adapted exhibits to be accessible to the visually impaired
- Major Qualifying Project–Modular Robotics Platform: Summer 2008
  - Designed and constructed educational robotics platform

## EXPERIENCE:

**HStar Technologies – Senior Robotics Software Engineer**

Cambridge, MA: September 2015 - Present

- Developed system architecture for new automated patient lifting device.
- Developing embedded firmware and control software for automated patient lifting device.
- Took on project management role for electrical and software systems.

**Woods Hole Oceanographic Institution (JPAnalytics) – Independent Contractor**

November 2015 - Present

- Developing firmware for new underwater communication board.

**QinetiQ North America – Senior Software Engineer**

Waltham, MA: July 2015 - September 2015

- Created arm collision avoidance algorithm for fourth generation talon robot
- Upgraded user interface PHP site for power line monitoring system

**DARPA Robotics Challenge Team WPI-CMU – Project Manager/Senior Robotics Engineer**

Worcester, MA: August 2013 – July 2015

- Team leader, responsible for all aspects of the team
- Assembled and managed 25-30 engineers to compete in the DARPA Robotics Challenge
- Lead the team in developing the robot to drive a car, traverse terrain, turn valves and more
- \$2.5 million in funding and over \$2 million in equipment
- Placed among top teams at the DARPA Robotics Challenge Trials and Finals

**Teledyne Webb Research – Embedded Software Engineer**

Falmouth, MA: May 2010- August 2012

- Worked to maintain and improve software for APEX float line
- Worked with clients to develop custom platforms based on their specific needs
- Designed and implemented next generation control boards and software for APEX float line
- Contributed to development of new products and expanding features of current products

**DeepQuest, LLC – Robotics/Electrical Engineer**

Cambridge, MD: June 2009 – May 2010

- Designed electrical systems for underwater robots
- Designed, built and programmed embedded circuit boards to control robotic subsystems
- Developed software for testing and control of embedded circuit boards
- Setup and maintained network server for remote access and data storage

**Nexus Design, LLC – Senior Intern**

Oxford, CT: 2004-2007

- Responsible for bringing a product from concept into production.
- Extensively used SolidWorks along with many other design programs.

- SKILLS:** **Languages** - C, C++, Visual Basic, C#, Java, HTML, Python, PHP, XML;  
**Chips** - ARM, AVR, PIC, MSP430;  
**Software** - SolidWorks, Altium Designer, Matlab, Eclipse, QT, PCL, OpenCV, Git, SVN, Perforce;  
**OS/RTOS** - Windows, Linux, ROS,  $\mu$ COS, FreeRTOS
- PATENTS:** **Methods and Systems for Configuring Sensor Acquisition Based on Pressure Steps**  
**Mathew DeDonato**  
United States Patent 20150003455, publication February 10, 2015.
- PUBLICATIONS:** **Team WPI-CMU: achieving reliable humanoid behavior in the DARPA Robotics Challenge**  
Christopher. G. Atkeson, Benzun P. W. Babu, Nandan Banerjee, Dmitry Berenson, Chris P. Bove, Xiongyi Cui, **Mathew DeDonato**, Ruixiang Du, Siyuan Feng, Perry Franklin, Michael A. Gennert, Josh P. Graff, Peng He, Aaron Jaeger, Kevin Knoedler, Lening Li, Chenggang Liu, Xianchao Long, Taskin Padir, Felipe Polido, and X Xinjilefu  
**Journal of Field Robotics** (Submitted)
- NO FALLS, NO RESETS: Reliable humanoid behavior in the DARPA Robotics Challenge**  
Christopher. G. Atkeson, Benzun P. W. Babu, Nandan Banerjee, Dmitry Berenson, Chris P. Bove, Xiongyi Cui, **Mathew DeDonato**, Ruixiang Du, Siyuan Feng, Perry Franklin, Josh P. Graff, Peng He, Aaron Jaeger, Joohyung Kim, Kevin Knoedler, Lening Li, Chenggang Liu, Xianchao Long, Felipe Polido, Michael A. Gennert, Taskin Padir, Gregory G. Tighe, and X Xinjilefu  
**15th IEEE-RAS International Conference on Humanoid Robots** (2015)
- Human-in-the-loop Control of a Humanoid Robot for Disaster Response: A Report from the DARPA Robotics Challenge Trials**  
**Mathew DeDonato**, Velin Dimitrov, Ruixiang Du, Ryan Giovacchini, Kevin Knoedler, Xianchao Long, Felipe Polido Michael Gennert, Taskin Padir, Siyuan Feng, Hirotaka Moriguchi, Eric Whitman, X. Xinjilefu, Christopher Atkeson  
**Journal of Field Robotics** (2015)
- Towards an Automated Checked Baggage Inspection System Augmented with Robots**  
**Mathew DeDonato**, Velin Dimitrov, Taskin Padir  
Command, Control, Communications, and Intelligence Technologies for Homeland Security and Homeland Defense, **SPIE Defense + Security Conference**
- Hierarchical Navigation Architecture and Robotic Arm Controller for a Sample Return Rover**  
Velin Dimitrov, **Mathew DeDonato**, Adam Panzica, Samir Zutshi, Mitchell Wills, Taskin Padir.  
**IEEE Systems, Man, and Cybernetics (SMC) Conference** (2013)
- Use Of Autonomous Profiling Floats For Validation And Calibration Of Satellite Ocean Color Estimates**  
Gerbi, G.P., Emmanuel Boss, Robert Fleming, David Antoine, Keith Brown, Andrew Barnard, **Mathew DeDonato**, William Woodward, Chris Proctor.  
**Ocean Optics** (2012)

References Available Upon Request