



EDUCATION

Bachelor of Arts: Mount Holyoke College (MHC), South Hadley, MA *Expected May 2015*

Majors: Mathematics, Computer Science and Physics *GPA: 4.00*

Scholarships: Google Anita Borg Memorial Scholarship ('14); Grace Hopper Conference Scholarship ('14)

Courses: Operating Systems; Artificial Intelligence; Machine Learning; Software Design; Web Programming; Computer Systems; Computational Theory; Abstract Algebra; Real and Complex Analysis; Electronics; Advanced Quantum; Statistical Mechanics; Differential Equations; Data Structures

SKILLS AND EXPERTISE

- **Programming Skills:**
 - *Proficient in*: Java; Python; JavaScript; MATLAB; Fortran; HTML
 - *Experienced in*: Node.js; Express.js; PostgreSQL; Google App Engine; Arduino IDE; CSS; C++; Linux
 - *Currently learning*: WearScript.js; Android Development
- **Leadership Experience**: Head of Literaty Pakistan USA Chapter (Sept 2012-May 2014); Youngest Secretary General for Five College Model United Nations VI (2012-13)

PROJECTS

- **CookUps** *Sept 2014- present*
 - Set up a food recipe search engine that suggests recipes based on ingredients
- **Just-in-time learning using Google Glass** *August 2014- present*
MIT Media Lab Fluid Dynamics Group
 - Develop Google Glass, Mobile and Web applications to enhance micro-presence and contextual learning
- **Udacity: Course Manager** *May '14-present*
 - *Example Courses*: Machine Learning; Web Development; Programming Foundations with Python
- **Gröbner Bases for Polynomial Systems in Robotics** *June - August 2014*
MIT Computer Science and Artificial Intelligence Laboratory
 - Developed algorithms to efficiently solve equations of motion of robots using Gröbner bases
 - Presentation: [Gröbner Bases for Polynomial Systems in Robotics](#)
- **Swarm Robotics: Remotely Controlled Multi-Robot Formations** *Sept 2013- June 2014*
Mount Holyoke College
 - Created a leader-follower model of robots using iRobot Create, Arduino robots and rigid graph theory
 - Presentations: [Leader Follower Control Using Directed Graphs](#); [Leader Follower Control of Multi-Robot Formations](#) (New England Undergraduate Computing Symposium 2014)
- **Ferromagnetic Nanostructures for Magnetic Memory Devices** *May 2012-May 2014*
Mount Holyoke College Scanning Probe Microscopy Lab
 - Investigated ferromagnetic nanostructures for non-volatile and dense magnetic memory
 - Publication: [A Multi-level Single-bit Data Storage Device](#) (Journal of Applied Physics March 2014); Presentation: [Multi-level Single-bit Data Storage Device](#) (Magnetism & Magnetic Materials 2013)
- **Model Joule Heating using Defense Meteorological Satellite Program data** *June- August 2013*
National Center for Atmospheric Research
 - Analyzed satellite data to estimate Joule heating for atmospheric models
 - Presentation: [Calculate Joule Heating using DMSP data](#) (American Geophysical Union 2013)

AWARDS AND HONORS

- Sarah Williston Senior Scholarship (2015); Sigma Pi Sigma-Physics Honors Society (2014); Top 100 in Code Jam to I/O for Women (2014); Sarah Williston Prize for Highest ranked students (2013); Sarah Williston Scholar- top 15% of class (2013); Bennett Prize for Excellence in Physics (2012); Mildred L Sanderson Prize for Excellence in Mathematics (2012)

TEACHING EXPERIENCE

- **Mount Holyoke College Teaching Assistant:** Sept '12-present
- Courses: Data Structures (Jan '14-present); Quantum Mechanics (Jan-May 2014); Real Analysis (Jan-May 2014); Linear Algebra (Jan- Dec 2013); Discrete Mathematics (Sept- Dec 2012)
- **Mount Holyoke College Physics PLUM (Peer-Led Undergraduate Mentor):** Sept '12-Dec '13
Courses: Electromagnetism (Sept 2012-Dec 2013); Force, Energy and Motion (Jan-May 2012)

COCURRICULAR ACTIVITIES

- **Hackathons and Conferences:** Google Scholars' Retreat 2014 – *Hackathon Project*: [Spark: match, mentor, code](#); WECode (Women Engineers Code) 2014 – *Hackathon Project*: Google Calendar Time Tracker App; Mount Holyoke College Maker Jam 2014 - *Project*: Follower-Leader Robots; New England Undergraduate Computing Symposium 2014; Northeastern Conference for Undergraduate Women in Physics (2012-2014)
- **Debate:** Member of Mount Holyoke College (MHC) Model United Nations (MUN) Society; MHC Debate Society; American Parliamentary Debate Association
- **Science Outreach:** NanoDays 2014 at Museum of Science, Boston (in collaboration with Center for Integrated Quantum Materials at Harvard University).
- **Math Competitions:** 4th position in 5th Central Connecticut State University Regional Math Competition (April 2013)