



## EDUCATION

- **Visiting Research Student: MIT - Massachusetts Institute of Technology** *Jan - May '15*
  - Full-time research student at MIT Media Lab Fluid Interfaces group
- **Harvard Extension School: Course: E-124 Data Structures and Algorithms** *Jan - May '15*
- **Bachelor of Arts: Mount Holyoke College (MHC)** *Sept '11 - May '15*
  - Majors: Mathematics, Computer Science and Physics *GPA: 4.00*
  - Courses: Operating Systems; Artificial Intelligence; Machine Learning; Software Design; Web Programming; Computational Theory; Abstract Algebra; Real and Complex Analysis; Electronics; Advanced Quantum; Statistical Mechanics; Differential Equations; Data Structures
  - Scholarships: Google Anita Borg Memorial Scholarship '14; Grace Hopper Conference Scholarship '14

## SKILLS AND EXPERTISE

- **Programming Skills:**
  - *Proficient in:* Java; Python; JavaScript; HTML; CSS; MATLAB; Fortran
  - *Experienced in:* Node.js; Express.js; WearScript.js; Android; PostgreSQL; Google App Engine; Arduino IDE; C++; Linux
- **Leadership Experience:** Head of Literaty Pakistan USA Chapter (*Sept '12 - May '14*); Youngest Secretary General for Five College Model United Nations VI (*'12-'13*)

## PROJECTS

- **Google Glass for just-in-time information** [MIT Media Lab Fluid Interfaces group] *Aug '14 - present*
  - Develop Google Glass, Mobile and Web applications to enhance micro-presence and contextual learning
- **Udacity: Course Manager** *May '14 - present*
  - Courses: Machine Learning; Web Development; Android Development; Programming with Python
- **CookUps:** <http://cookups.org/> *Sept - Dec '14*
  - Set up a food recipe search engine that suggests recipes based on ingredients
- **Gröbner Bases for Robotics** [MIT Computer Science and Artificial Intelligence Lab] *June - Aug '14*
  - Developed algorithms to efficiently solve equations of motion of robots using Gröbner bases
  - Presentation: [Gröbner Bases for Polynomial Systems in Robotics](#)
- **Swarm Robotics: Multi-Robot Formations** [Mount Holyoke College] *Sept '13 - June '14*
  - 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 '14)
- **Ferromagnetic Nanostructures for Magnetic Memory** [Mount Holyoke College] *May '12 - May '14*
  - Investigated ferromagnetic nanostructures for non-volatile and dense magnetic memory
  - Publication: [A Multi-level Single-bit Data Storage Device](#) (Journal of Applied Physics March '14); Presentation: [Multi-level Single-bit Data Storage Device](#) (Magnetism & Magnetic Materials '13)
- **Model Joule Heating** [National Center for Atmospheric Research] *June - August '13*
  - Analyzed satellite data to estimate Joule heating for atmospheric models
  - Presentation: [Calculate Joule Heating using DMSP data](#) (American Geophysical Union '13)

## AWARDS AND HONORS

- **Awards:** 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:** 4<sup>th</sup> position in 5<sup>th</sup> Central Connecticut State University Regional Math Competition (April 2013)