MINA KHAN

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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

- 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)