407 Memorial Dr,
Cambridge, MA,
USA

Yousef S. Alowayed

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(540) 998-8887

EDUCATION

Massachusetts Institute of Technology GPA: 4.7/5.0 — Cambridge, MA
Candidate for double major B.S. in Physics & B.E. in Electrical Engineering and Computer Science — *Sep 2012 - Jun 2017*

PROFESSIONAL & RESEARCH EXPERIENCE

Tesla Motors, Tesla Energy System Validation — Palo Alto, CA
Test System Automation — *June 2016 – Aug 2016*
• Increased regression test automation by implementing hardware systems controllers and integrated them with downstream firmware test suites
• Introduced a new coding standard and auto-documentation to promote a long lasting code base

Robotic Jewelry at MIT, Media Lab's Living Mobile Group — Cambridge, MA
Electrical Design and Assembly — *Oct 2015 – Dec 2015*
• Designed and wired the control system for centimeter size robots integrated into clothing, which allowed for speed and direction control through Wi-Fi chips and AT Commands

Strategic Consulting at Booz Allen Hamilton — Riyadh, Saudi Arabia
Consultant — *May 2015 - Aug 2015*
• Gathered data, conducted interviews, and synthesized findings into an overview of the global desalination market, a benchmark of the Saudi Arabian desalination industry, and a strategy for future improvements

Perovskite solar cell research at KAUST, Prof. Osman Bakr's Photovoltaic Research Group — Thuwal, Saudi Arabia
Research Assistant — *Jun 2014 - Jul 2014*
• Fabricated organic solar cells using differing fabrication parameters
• Characterized their final properties to discover relations between the parameters and the resulting efficiencies
• Led to a 100% increase in efficiency

Ion Cavity Trap at MIT, Prof. Isaac Chuang's Quantum Computing Group — Cambridge, MA
Undergraduate Researcher — *Sep 2013 - Feb 2014*
• Designed a stabilizing feedback system that keeps an ion afloat above a series of radio frequency antennas utilizing DA/AD converters, networking software, microcontrollers, and stabilizing software
• Resulted in stable q-bit ions that will assist in developing a quantum computer

Ion Pumps at MIT, Prof. Ghoniem's Efficient Combustion Group — Cambridge, MA
Undergraduate Researcher — *May 2013 - Jun 2013*
• Developed python code that analyzed 2,000+ data points and visualized the data, which guided research towards increased efficiency combustion engines
• Designed and constructed additional lab equipment using SolidWorks

LEADERSHIP & ACTIVITIES

Middle East & North Africa (MENA) Career Fair — Cambridge, MA
Employer Relations and Publicity Chairman — *2013 - Present*
• Organized the first and second MENA career fairs at MIT in Spring 2015, 2016

Kappa Sigma Fraternity, Gamma Pi Chapter — Cambridge, MA
Philanthropy Chairman, Rush Chairman — *2013 - 2015*
• Raised over $1,000 for the American Cancer Society by coordinating and leading two large philanthropy events
• Planned and managed over fifty events for MIT's Campus Preview Weekend and Rush

McKinsey&Company EDAD Training Program — Boston, MA
• Participated in a weekend program with practice cases, consultant experience talks, and leaderships workshops — *Apr 2015*

MIT Saudi Student Association — Cambridge, MA
Vice President — *2014 – 2015*
• Organized an event with prominent Saudi speaker Amr AlMadani, who introduced Lego robotics to Saudi Arabia

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SKILLS & AWARDS

Languages: Fluent in English and Arabic
Device skills: Oscilloscope, Solder, Ohm & Volt-Meter, Spectrometer, Surface Electron Microscope, Plasma Cleaners, Clean Box
Programming: Assembly, Java, Python, Mathematica, Matlab, C/C++, LATEX, html, CSS, JavaScript
Award: Recipient of the graduate university King Abdullah University's scholarship for gifted students (May 2012)

PERSONAL & CLASS PROJECTS

6.115 Microprocessor Laboratory — Cambridge, MA
• Over 8,000 lines of assembly code — Feb 2016 – Present
• Over 12 chips wired, programmed, debugged
• 5 projects taken to completion: Robot arm, MRI machine, Calculator, Fluorescent Lamp Striker, Automated Laser Light Show
• 1 project in progress: Wireless robotic chess set

6.005 Software Construction — Cambridge, MA
• Over 10,000 lines of Java code — Feb 2016 – Present
• 5 projects taken to completion: Twitter social network graph, Artificial Poet, Recursive Mathematical Differentiator, Multiplayer (multi-threaded) Minesweeper

6.161 Optics Laboratory — Cambridge, MA
• Designed side projection display using ray tracing simulations run on Matlab — Sep 2015 – Dec 2015
• Manufactured the side projection display using mill, buffer wheels, and acrylic epoxy
• 1 project taken to completion: Side projection waveguide display

6.169 Python Game Design — Cambridge, MA
• 800 lines of python code using PyGame (total lines > 1,500) — Feb 2016 – Present
• 1 project taken to completion: Graphical puzzle game (download it from my site here: http://web.mit.edu/~alowayed/www/projects.html#title-digital ... my site has not been taken to completion though)

Personal Website — Cambridge, MA
• Over 1,000 lines of HTML, CSS, and JavaScript — Sep 2015 – Present
• 1 project still in progress: Personal website with current and previous projects, courses, education and skills

PROFESSIONAL & RESEARCH EXPERIENCE TECHNICAL DETAILS

(Technical details for professional experiences mentioned above)

Tesla Energy System Validation — Palo Alto, CA
• Over 1,000 lines of python
• Multithreaded USB relay, power supply, and grid simulator controller interfaces in python
• CAN and ModBus communication interfaces in python
• Jenkins build and test server
• 1 project taken to completion: Automated update regression test station

Quantum Computing Group — Cambridge, MA
• 1,000 lines of python code interfaced with existing system through network libraries (sockets)
• 3 signal converter chips
• 1 Raspberry Pi used as feedback gain controller
• 1 project taken to completion: Feedback controller to stabilize quantum bit

MIT Efficient Combustion Group — Cambridge, MA
• 500 lines of python code interfaced with excel
• 2 Solid Works projects
• 2 projects taken to completion using SolidWorks and python: Python program that monitors combustion system and detects leaks, New heat-insulating chamber