

A. SINA BOOESHAGHI

1200 E. California Blvd. Pasadena, CA 91125 • <https://www.sina.io>

EDUCATION

California Institute of Technology: <ul style="list-style-type: none">PhD candidate in the Mechanical and Civil Engineering Department, advised by Professor Lior PachterPublished multiple first-author papers, see Google Scholar: https://scholar.google.com/citations?user=1das_jsAAAAJ	2017-Current
Massachusetts Institute of Technology: <ul style="list-style-type: none">Awarded B.S. Degree in Mathematics & B.S. Degree in Mechanical Engineering, GPA: 4.6/5.0GRE: Verbal - 161/170 (88%), Quant - 162/170 (82%), Analytical - 4.5/6.0 (82%)	Class of 2017

EXPERIENCE

Pachter Lab: Caltech PhD Candidate <ul style="list-style-type: none">Developed low-cost open-sourced microfluidics pumps, microscope, and software for cheap and scalable single-cell sequencingDeveloped algorithms and tools for fast processing of single-cell RNA-sequencing and COVID-19 diagnostic dataDeveloped a spatially-resolved gene-isoform cell-type atlas for the mouse primary motor cortex	Fall '17-Current
Eaton Corporation: Research Team: Computation <ul style="list-style-type: none">Developed MATLAB code to simulate direct contact immiscible fluid mixing and heat transfer in a novel heat exchangerSimulations demonstrated order of magnitude improvement in heat transfer compared to traditional heat exchangersAwarded \$300k High Performance Computing for Manufacturing grant from Lawrence Livermore National Lab	Summer '17
Device Research Lab: MIT Undergraduate Researcher <ul style="list-style-type: none">Ideated, designed, and fabricated a thermo-electrochemical device that removes heat and generates power from waste-heatDeveloped COMSOL simulations and mathematical models to theoretically predict the power output of the deviceSuccessfully submitted a provisional patent and published a journal paper in <i>Sustainable Energy & Fuels</i>	2015-2017
W.L. Gore & Associates: New Product Development Intern, Research Division <ul style="list-style-type: none">Designed and fabricated a biaxial instron machine, control system, and GUI to apply and monitor tension in thin filmsOutcomes include improved accuracy and stability in acquired data & estimated cost savings of \$40,000 per unit	Summer '15
Multidisciplinary Simulation Estimation & Assimilation Systems Lab: MIT Undergraduate Researcher <ul style="list-style-type: none">Implemented a 2nd order numerical scheme to solve the Hamilton-Jacobi equation for optimal paths of subsurface vehiclesSimulated time-dependent fluid flows past immovable obstacles using MATLAB, to study oceanic flows around islands	2015
N12 Technologies: Research, Systems, & Product Development Intern <ul style="list-style-type: none">Designed, fabricated, and assembled a web-handling system for continuous carbon nanotube (CCNT) growthDesigned, fabricated, and assembled a CCNT transfer assembly for CCNT transfer from steel to resin medium	Summer '14

ACTIVITIES

Biosciences Happy Hour: Organizer & Team Member <ul style="list-style-type: none">Worked with a group of 6 students to raise funds from biotech companies to sponsor food and drinksPromoted, marketed, and facilitated discussions between professors and students at the event	2018
Tea with Teachers: Founder & Interviewer <ul style="list-style-type: none">Built a team and developed a process for performing video recorded interviews of MIT professors, posted onlineThe goal of the project is to unveil the personalities of professors to students to engage a wider audience in researchBuilt and maintain https://www.teawithteachers.com/, awarded upwards of \$10,000 in funding from MIT	2016-2017
MIT xFair Spring Career Fair: Director of Corporate Relations Committee <ul style="list-style-type: none">Effectively led a team of 10 to communicate with and invite over 300 companies to xFair 2016Managed the team by distributing work with respect to emailing, calling, and maintaining relations with companies	2014-2016
American Society of Mechanical Engineers: President <ul style="list-style-type: none">Teacher Assistant for SolidWorks ClassHosted Mechanical Engineering students from the University of Guanajuato, Mexico, for a one week exchange program	2014-2017

COMMUNITY SERVICE

<ul style="list-style-type: none">Boston Marathon: handed out water to runners and cleaned post-event trashOrganized the Nearly Naked Nearly Mile to raise clothing donations for the Harvard Square Homeless Shelter	'14, '15, '16, '17 '14, '16
--	--

AWARDS & HONORS

2018 Named a Caltech Knapp Fellow	2016 MIT Mech Eng Departmental Service Award
2017 Named a GEM Fellow	2013 Valedictorian of Wellington High School
2016 Best Engineering Poster at SACNAS Conference	2012 Placed 8th at UPenn National Debate Tournament

SKILLS & LANGUAGES

Computer Programs	Fusion 360, NX, Solidworks, AutoCAD, MasterCam, Adobe Suite (esp. Illustrator & Lightroom)
Tools & Machines	CNC Mill, Shop tools, Instron Testing, 3D Printing, Laser Cutting, Woodworking
Languages	Spanish (Conversational), MATLAB, Mathematica, Python, C, \LaTeX , Bash, Arduino, TypeScript
Fun	Tea Making, Licensed Boater, Cycling, Photography, Ping Pong