David Doan

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Education

Stanford University *Present*
Masters of Science Candidate (M.S.c) for Mechanical Engineering *Stanford, CA*

Massachusetts Institute of Technology (MIT) *June 2017*
Bachelor of Science (B.S.) for Mechanical Engineering (Course 2) *Cambridge, MA*
GPA: 4.6/5.0

Experience

Relativity Space, *Mechanical Engineering Intern* *Jun - Sept 2017*

- Development of a novel, automated manufacturing process
- Development of in-house toolpath planning for said manufacturing process

MIT Lincoln Beaver Works Center, *Researcher* *Jan - Jun 2017*

- Designed a benchtop system to convert a 1kW generator (four-stroke) to run on hydrogen produced by an Al-H_2O reaction by carburetor injection
- Designed a benchtop system to convert a 1.2kW airplane engine (two-stroke) to run on hydrogen by continuous direct injection at top dead center (TDC) that resulted in higher power density

MIT Global Engineering and Research (GEAR) Lab, *Researcher* *Sept 2016 - Jun 2017*

- Developed MATLAB code in order to decrease the cost of solar powered, drip irrigation systems in developing countries
- Modelled drip-irrigation systems by coupling several subsystem models (solar, pump, water consumption etc.)
- Cost-optimized the system configuration (specific PV, specific water pump, tilt and azimuth angle, etc.) using a genetic algorithm for several different plants for the specific location of Jalgaon, India

Tesla Motors, *Drive Systems Engineering Intern* *Jun - Sept 2016*

- Designed dozens of locating and test fixtures for automated equipment for the current and future stator manufacturing lines
- Researched and implemented automated vision systems to detect defects in stators during the winding stage to prevent rework and scrap
- Analyzed and calculated detailed numbers for future stator lines in order to ensure smooth process flows and provide quantitative metrics for automated deliveries
- Designed and modelled concepts for automated ceramic breaking to reduce cycle times

Space Exploration Technologies (SpaceX), *Avionics Engineering Intern* *Jun - Aug 2015*

- Developed, from design to implentation, a first prototype for automated mechanical testing of >80% of all harness connectors in Falcon 9 and Dragon vehicles
- Designed and implemented over a dozen tooling solutions for several harnesses in order to decrease cycle times and rework
- Identified root cause, tested, and developed a solution for a mechanical issue on Dragon harnesses to prevent mechanical failure and rework

Leadership

Founding Member, Board Member, Director — MakeMIT (Hardware Hackathon) *Sept 2013 - Feb 2015*
Founding Board Member — Design for America *Sept 2014 - Jun 2015*

Awards and Honors

Questbridge Scholar — Massachusetts Institute of Technology *2013 - 2017*
National Science Foundation (NSF) Research Fellow — Stanford University *2017 - 2020*