

## Amanda J. Roberts

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### EDUCATION

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#### Massachusetts Institute of Technology

June 2019

Bachelor of Science in Aerospace Engineering, 4.3/5.0 GPA

### WORK EXPERIENCE

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#### MIT Co-CreATe - Instructor

January-February 2020

- Taught human-centric engineering design to college students at a series of assistive technology workshops in India and Saudi Arabia.
- Mentored teams as they collaborated with disabled clients to design personalized engineering solutions.

#### NASA Jet Propulsion Laboratory - Intern

June-August 2018

- Led a mission concept development study to identify a compelling plan to explore the surface of Venus.
- Worked with subject matter experts to identify opportunities for modern technology to extend spacecraft lifespan and enable collection of new data.
- Planned and participated in rapid concept maturation studies for internal and external clients.

#### MIT Aerospace Computational Design Lab - Undergraduate Researcher

June-August 2017

- Implemented a multi-step reaction model of combustion in a small engine using MATLAB
- Managed the Github repository, working closely with lab members to increase utility of common scripts.

#### MIT Human Systems Lab - Undergraduate Researcher

June-August 2016

- Calibrated videos of subjects exercising in zero gravity using point tracking MATLAB scripts.
- Researched the characteristics of the optics used to ensure dimensional accuracy.

### PROJECTS

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#### Spacecraft Design Capstone

Spring 2019

- Designed spacecraft structures to support a life detection mission to the Saturnian moon Enceladus.
- Studied systems engineering techniques to determine workflow.
- Managed power budget, using a top down approach to refine estimates.
- Generated a 3D model of the vehicle design using Solidworks.
- Presented the vehicle design to a panel of professors and industry experts at a critical design review.

#### Spinning Mirror Telescope

Spring 2018

- Integrated components to achieve center of gravity balancing for a spinning mirror telescope satellite.
- Wrote procedures for satellite assembly and air bearing operation.

#### Flight Test

Spring 2018

- Designed a flight test procedure to examine the spiral divergence of a fixed wing aircraft.
- Served as flight director during the test, and analysed the resulting kinematics data using Python.

#### Blended Wing Airplane Redesign

Fall 2017

- Performed wind tunnel and cruise analyses of a Boeing blended wing body aircraft using XFOIL and MATLAB.
- Increased the static stability margin by 10% by making improvements to the airfoil

### SKILLS

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- MATLAB
- Python
- Simulink
- Solidworks modeling
- Technical writing