

# Robert Jomar Malate

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Website & Portfolio: <https://www.robjmal.com/> | GitHub: <https://github.com/RobJMal>

## EDUCATION

### HARVARD UNIVERSITY

Graduation Date: May 2021

#### S.B. Mechanical Engineering with Honors | Chinese Language Citation (equivalent to Minor)

GPA: 3.63

Coursework: Introduction to Robotics; Computational Structural and Solid Mechanics; Engineering Problem Solving and Design (System Engineering); Design and Abstraction in Computation (Intro to Computer Science II); Tiny Machine Learning (TinyML)

## WORK EXPERIENCE

### UBTECH ROBOTICS | Hardware and Design Team

Pasadena, CA

#### *Mechatronics Engineer*

September 2021-Present

- Assembled and troubleshooted all robot prototypes developed in the research center.
- Wrote, maintained, and communicated documentation for all robot prototypes developed in the research center.
- Developed software drivers and ROS package to control the LEDs via SPI communications on a robot using C++.

#### *Mechanical Engineering Intern*

June-September 2021

- Assembled and documented assembly process for the robot prototypes developed.
- Setup measurement hardware for use in engineering validation tests.
- Coordinated efforts between the mechanical and electrical sub teams for the upgrade of a robot prototype.

### WYSS INSTITUTE | Microrobotics Laboratory

Cambridge, MA

#### *Undergraduate Research Assistant*

January-May 2020

- Designed and manufacturing wings for experimentation for the development of a robot design optimization tool.
- Designed joints for a novel vertical hopping robot.
- Conducted a finite-element analysis using ABAQUS to optimize Robobee wing frame design.

### BUSEK | Electrospray Group

Natick, MA

#### *Aerospace Engineering Intern*

May-August 2019

- Designed and implemented a LabView program to control satellite thrusters during testing.
- Participated in preparing satellite propulsion components for testing and assembly.
- Debugged testing-system sub circuit to increase thruster testing time.

### GOOGLE, LLC | Google Ads Infrastructure

Mountain View, CA

#### *Engineering Practicum Intern*

May-August 2018

- Developed a web application that serves as an internal debugging tool using C++ and AngularDart, reducing average lookup time from 2 hours to 10 minutes.

## ACTIVITIES AND TEACHING EXPERIENCES

### HARVARD SCHOOL OF ENGINEERING AND APPLIED SCIENCES (SEAS)

Cambridge, MA

#### *Undergraduate Teaching Fellow (ENG-SCI 128/228)*

January-May 2021

- Assisted course instructor with running the course by grading assignments and hosting office hours for Harvard's graduate-level Computational Structural and Solid Mechanics course (ENG-SCI 128/228).
- Received a 5.0/5.0 rating on student-given course feedback.

#### *Head Teaching Fellow (ENG-SCI 125)*

August-December 2020

- Assisted course instructor with running the course by grading assignments and hosting office hours to help students with understanding the material for Harvard's Mechanical Systems course (ENG-SCI 125).
- Designed the programming tutorials and assignments, aimed to teach modelling and computational methods to solving mechanical system problems.
- Received the Derek Bok Certificate of Distinction and Excellence in Teaching award.

## SKILLS

- **Engineering:** Project management; Rapid prototyping; Manual & CNC Machining; Technical documentation
- **Design and Analysis:** CAD (SolidWorks); Finite Element Analysis (ABAQUS, COMSOL); MATLAB; LabVIEW
- **Programming Languages:** Python; C/C++
- **Languages:** Mandarin Chinese (Intermediate-Speak/Read/Write)