# *Yichi Ma*

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## *Education*

**Stanford University** *September, 2022 – June, 2024*
*Master of Science, Mechanical Engineering - Fluid Mechanics* *Stanford, CA, USA*
*Relevant Courses: Fluid Mechanics, Experimental Methods, Numerical Solutions of PDE, Optimization*

**University of California, Berkeley** *August, 2018 – August, 2022*
*Bachelor of Science - High Honors, Mechanical Engineering* *Berkeley, CA, USA*

## *Professional experience*

**Engineering a Thermoelectric Generator for Wildfire Detection** *January, 2023 – Present*
*Stanford University* *Stanford, CA, USA*

- Conducted experiments to characterize thermoelectric generator (TEG) by using thermocouples and LabView; analyzed experimental data and presented findings to the research team.
- Designed and developed an experimental enclosure for thermoelectric generator tests in fire flames using Solidworks, allowing collections of thermoelectric generator output and temperature data.
- Programmed and integrated a radio module to allow remote communication of results from TEG.

**Investigating Various of Aspects of Fire Whirl Behavior** *January, 2022 – August, 2022*
*University of California, Berkeley* *Berkeley, CA, USA*

- Conducted crude oil burning experiment and collected fuel mass loss rate, flow velocity, and fuel temperature data by using balance, hot wire anemometers, and thermocouples, and DustTrak.
- Independently analyzed velocity data and generated flow velocity profile graph with uncertainties via Matlab; wrote Matlab code to automatically identify critical points of mass data.
- Built a motorized lab stand with 80/20 frames, Arduino microcontroller, lead screw linear slider with motor for anemometers movements, allowing velocimetry data collections at various locations.
- Was acknowledged in an experimental characterization paper submitted to a conference.

**Knee Replacement Surgical Robot - Engineering Intern** *June, 2020 – August, 2020*
*Yuanhua Intelligence Co., Ltd.* *Shenzhen, Guangdong, China*

- Created an assembly model of an end of arm tooling components, and generated manufacturing-ready 2D engineering drawing with tolerances and material selection specified through Solidworks.
- Drafted and created a model of mechanical design of a tracker system hardware by using Solidworks.
- Conducted experiments to quantify the deflection and benchmark the performance of the design.

## *Relevant course projects*

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| **Characterization of a Sythn Jet** | Experimentally investigating velocity profile and frequency response of sythn jet using Kiel probes and pressure sensor. |
| **GroundHog: In-pipe Robot** | Designing and fabricating a single motor screw-drive robot. |

## *Technical skills*

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| **Software** | Solidworks, AutoCAD, Fusion 360, Arduino, Raspberry Pi, LabVIEW, Abaqus, LaTeX |
| **Hardware** | 3D Printers, Universal Laser Cutter, Omax Waterjet, Oscilloscope, Pressure Transducer, Kiel Probe |
| **Computing and Programming** | MATLAB, Simulink, PIVLab, Python, Java |