# Hanna L. Mitamura

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## EDUCATION

**M.S. Mechanical Engineering**
Boston University
2020-2022
Thermal Fluids Concentration
GPA 3.98

**B.A. Chemistry**
Vassar College
2014-2018
Departmental Honors
Anthropology Minor
GPA 3.71

## SKILLS

**Engineering**:
- MATLAB
- 3D CAD
- SolidWorks
- ANSYS
- OpenFOAM 9, v2112
- COMSOL Multiphysics
- Finite Element Analysis (FEA)
- Computational Fluid Dynamics (CFD)
- HTML5/CSS web
- Visual Studio Code

**Chemistry:**
- GCMS
- UV-Vis spectroscopy
- FTIR spectroscopy
- NMR spectroscopy

**Additional:**
- Microsoft Office
- Mandarin (HSK5)
- Excellent Manual Dexterity

## EXPERIENCE

**Teaching Assistant,** Boston University, Summer 2021
- Guided 5 teams of undergraduate students through successful completion of Truss Design (physical and MATLAB modelling) for EK301 Statics under tight deadline

**Language Scholar**, Nanjing University, 2018-2019
- Attained HSK Fluency level 5 of 6 in Chinese (Mandarin) language through tutoring exchange

**Research Assistant**, Vassar College, 2016-2018
- Researched polyanhydride synthesis using FTIR and NMR spectroscopy, and presented findings to American Chemical Society, ACS URS April 2018,
- Published GCMS and FTIR study of Baltic amber

**Chemistry Intern**, Good Housekeeping Institute Summer 2017
- Conducted study on color-fastness of hair dyes using a benchtop spectrophotometer
- Results used to publish January 2019 edition article on list of Best Permanent Colourants

## PROJECTS

**Intercollegiate Rocket Engineering Competition (IREC)**
BU Rocket Propulsion Group, Fall 2020 - Spring 2021
- **Airframe team lead**
  - material selection, structural analysis, SolidWorks modeling, drawing (ASME Y14.5), simulation and cost assessment
- **Flight Dynamics support**
  - OpenRocket Flight Simulation, integration of rocket subsystems

**CFD Simulation of Micronozzle Flow**, Spring 2022
- Conducted OpenFOAM and COMSOL simulation of micronozzle flow for use in water vapor-based micro-propulsion systems

**Continuous Feed Pipe Cutter Design**, Fall 2021
- Designed a pipe-cutting and placement machine, incorporated client feedback, modeled custom parts using SolidWorks, conducted Net Present Value (NPV)/payback period assessment

Portfolio available at hannamitamura.github.io