# Josh **Kraan**

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## Education

### University of British Columbia

Bachelor of Applied Science in Engineering Physics — *September 2018 - Present*

## Skills

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|---|---|
| **Solidworks** | CSWA certified |
| **ANSYS Fluent** | Performed flow and combustion simulations |
| **Programming** | Python, Java experience |

## Experience

### UBC Rocket

Whistler-Blackcomb Propulsion Subteam Member — *January 2019 - Present*

- Ran ANSYS Fluent simulations of the engine that lead to important design changes.
- Designed a redesigned fuel injector to eliminate safety issues and improve performance.
- Working on the simulation and design of a regeneratively cooled rocket engine.

### UBC Formula Electric

Mechanical Subteam Member — *September 2018 - April 2019*

- Joined a team working on designing an electric race car for the 2020 Formula SAE Electric competition.
- Used Solidworks to design and simulate a PCB enclosure and a regenerative breaking control system.

### Orphaned Wildlife Rehabilitation Society

Bird Care Assistant — *July 2019 - August 2019*

- Cared for injured and orphaned birds of prey.
- Lead tour groups and educated the public.

### Save-On Foods

Reline Crew — *May 2019 - July 2019*

- Helped to renovate a store while ensuring customer satisfaction.

## Projects

### Rocket Engine Regenerative Cooling Analysis

- Currently performing 1-dimensional analysis of the cooling of a regenerative rocket engine.
- ANSYS Fluent simulations will be used to confirm results.

### Rocket Engine Pintle Injector

- Used ANSYS Fluent to analyze previous injector design and discovered possible improper combustion zones.
- Designed a new injector to fix possible combustion issues and chance of oxidizer/fuel premixing.
- Solidworks was used to create new design, and manufacturability was emphasized.

### PCB Enclosure

- Used Solidworks to design a waterproof 3d printed PCB enclosure.
- Used Solidwork's simulation tools to verify enclosure would withstand forces exerted on it.