

# Patrick Kage

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## SKILLS

### LANGUAGES

(Computer)

Python  
HTML  
CSS/Sass  
Javascript  
C/C++  
Rust  
Java  
Assembly (MIPS)  
SQL

### FRAMEWORKS

Node.js/Express  
Flask  
SQLite (all bindings)  
React.js  
Redux + React-Redux  
Vue.js  
Polymer  
Vanilla JS  
Jest.js  
SFML (C++)  
SciPy/NumPy

### TOOLS

(Neo)Vim  
Linux (systems prog.)  
Final Cut Pro  
Adobe Photoshop  
Adobe Illustrator  
G Suite  
MS Office (esp. Excel)

### LANGUAGES

(Human)  
English (Native)  
Polish (Fluent)  
Mandarin (Intermediate)

### EXTRA-CURRICULAR ACTIVITIES

Computer Society (TechSec)  
Running  
Sailing  
Powerlifting  
Skydiving  
SCUBA

## EDUCATION

### UNIVERSITY OF EDINBURGH | BSc.(H) ARTIFICIAL INTELLIGENCE & C.S.

2017 — 2021 | Edinburgh, Scotland, UK

- Took Product Design and Physics 1B (Quantum) as outside courses.
- Technical Secretary at CompSoc as of summer 2018. CompSoc is the largest tech society in Scotland and largest society in the university.

### CHOATE ROSEMARY HALL | HIGH SCHOOL DIPLOMA

2012 — 2016

- Founded and headed Choate Programming Union (CPU).
- Awarded \$1,000.00 grant by Google.
- Through CPU, pushed to increase number of CS courses on offer from 2 to 7.

## EXPERIENCE

### NASA JET PROPULSION LABORATORY | SOFT. ENG. INTERN

Summers 2016, 2017, 2018 | Pasadena, CA, US

- 2016 — Worked in JPL's 397-F (Ops Lab/Human Interfaces Group) to develop mission formulation software to enable design of satellite propulsion systems in support of Team X and Xc's model-based systems engineering and foundry modernization initiatives. Resulting project made part of JPL's long-term strategic plan.
- 2017 — Continued work from 2016 on the Integrated Modeling Environment (IME). Developed a plugin system for IME through JPL's 397-M group. Focused on data visualization and rapid development. Produced a series of demo plugins, including utilizing WebVR to display satellite models.
- 2018 — Developed CODEX, a first-pass data analytics framework for scientific data from JPL/external missions through the Machine Learning and Instrument Automation (MLIA) group. Focused on the frontend, leading a major refactor towards adding unit testing, removing bad practice code, adding documentation, and transitioning the data model to use immutable.js + Redux. Additionally, wrote a static analysis toolkit to aid refactoring of poorly written and undocumented codebases in Javascript.

### AURORA FLIGHT SCIENCES | SOFT. ENG. INTERN

December 2016 – May 2017 | Cambridge, MA, USA

- Developed flight/ground station software and hardware for upcoming microsatellite missions, focusing on software systems engineering.
- Worked on joint project with MIT Space Telecommunications Astronomy and Radiation Lab (STARLab).
- Created new IP, currently in patent process.

### MASSACHUSETTS INST. OF TECHNOLOGY | RESEARCH ASSISTANT

Summer 2015, December 2016 – May 2017 | Cambridge, MA, USA

- Summer 2015 — Developed ground/flight software for MIT Space Telecommunications, Astronomy, and Radiation Lab (STAR Lab)'s microsatellite project (MiRaTA), as well as working remotely on JPL mission formulation software. Ground software written at this time is still in use at MIT Lincoln Labs.
- 2016-2017 — Created visualization software to model satellite constellations to support ongoing research at STARLab. Represented STARLab and MIT professionally at the MIT Industry Liaison Conference in Vienna, Austria.
- On Nov. 18, 2017, MiRaTA launched from Vandenberg Air Force Base in California.