

# Karina (Iat Cheng) Lei

<https://KarinaLei.github.io> | [iatcheng.karinalei@gmail.com](mailto:iatcheng.karinalei@gmail.com) | Vancouver, BC, Canada

## Summary

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Agile developer with 2+ years of work and project experience in developing full-stack applications, data analysis tools, and instrumentation controls.

## Experience

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### Software & Instrumentation Engineer Co-op | BC Cancer Research June – December 2020

- Implemented dynamic database queries in **Python** using **REST API** and **Django** framework
- Developed scripts to generate **JSON** and **XML** metadata to be submitted via **curl API** requests
- Automated data analysis and visualization tasks with **Bash** and **R** scripts
- Improved performance of scalable bioinformatics pipelines using **Python** and **Snakemake**
- Integrated dynamic **HTML** report generator into data analysis pipelines
- Led **firmware** development in **C++** to control high-precision fluidics system
- Designed **UI/UX** for control software that significantly improved users' satisfaction

### Mechanical Engineer Co-op | LB Foster Rail Technologies January – April 2019

- Facilitated product development, data analysis, and rigorous life-cycle testing

## Projects

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### Movie Nomination Engine | [KarinaLei.github.io/MovieAwards4Entrepreneurs](https://KarinaLei.github.io/MovieAwards4Entrepreneurs)

- Designed and built a dynamic movie search and nomination engine in **ReactJS** utilizing **OMDB REST API**

### Autonomous Vehicle Simulation | [github.com/KarinaLei/beep-boop](https://github.com/KarinaLei/beep-boop)

- Implemented **machine learning** algorithm with **Python** libraries such as **OpenCV**, **Keras**, **TensorFlow**
- Created **convolutional neural network** with >90% accuracy in detecting and reading license plates
- Utilized **reinforcement learning** for vehicle navigation training

## Education

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### University of British Columbia Fall 2017 – Spring 2022 (expected)

#### Bachelor of Applied Science | Engineering Physics

- Dean's Honour List, CGPA 4.0
- Design Team Affiliation: Software Developer at **Formula Racing UBC**
  - Develop in-house data analysis software in Python and MATLAB

## Skills

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**Languages:** Java, Python, C++, JavaScript(ES6), HTML5, CSS3, Swift, SQL, C, R, Bash, Perl, MATLAB

**Technologies:** AWS (EC2, RDS, S3, etc.), Azure (Analytics, Storage Blob, VM, etc.), ReactJS, Redux, NodeJS, NPM, Django, iOS, Docker, MySQL, Unix/Linux, JSON, XML, Git, UI/UX, JUnit, Travis CI, Jira, Confluence, SSH, Conda, Machine Learning, NumPy, Keras, TensorFlow, OpenCV, ROS, SciPy, Gazebo, FTP Protocols, Pandas, Snakemake