

# Erik Reppel

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## Education

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### University of Victoria

Bachelor of Computer Science, April 2018

**Notable Courses:** CSC 474: Data Mining, CSC 485 (topics) Natural Language Processing

### Coursera (University of Washington)

Machine Learning Specialization, in progress

### Fast AI

Practical Deep Learning for Coders

### Paper reading

Attempting to keep up with papers on deep learning as they come out

## Experience

### Coinbase

January 2017 – May 2017

Coinbase is the largest bitcoin exchange in North America, and at any given moment stores 10% of the worlds Bitcoin

#### *Software Engineering Intern*

**Tech stack:** Python, Docker, JavaScript, Go

- Implemented convolutional Laplacian variance with tracking.js for better photocapture in frontend of webapp
- Built ML model using gradient boosting and OpenCV to determine if an ID is readable.
- Built service in golang that uses Fernet + Shamir secret sharing that securely store sensitive data
- Attempted to use CNNs with custom kernel to detect images that have been photoshopped
- Built reverse image search to prevent ID reuse by fraud rings

### General Fusion

March 2016 – August 2016

General Fusion is the world's largest private venture into fusion research with the goal to build a fusion reactor

#### *Software Engineering Intern*

**Tech stack:** Go, Python, Pachyderm, Kubernetes, gRPC, AWS

- Made significant contributions to architecture and implementation of big data infrastructure to process, version, store, and make available hundreds of terabytes of experimental physics data
- Wrote microservices in go for parsing, extraction of metadata, versioning, and storage of data
- Built API for users to discover and access experimental physics data at large volumes
- Helped design processing DAG of physics data in map/reduce paradigm
- Wrote python API client to allow for simple access and visualization of physics data

### Intuitive Surgical

January 2015 – August 2015

Intuitive Surgical produces the da Vinci, a surgical robot

#### *Software/Data Engineering Intern*

**Tech stack:** Python, Scala, JavaScript, Hadoop, Spark, Kafka, AngularJS, NodeJS, ElasticSearch, MongoDB

- Build new prototype of existing service using Hadoop and Spark for real time data analytics
- Created real time updating graph of components in a daVinci with D3, NodeJS, and websockets
- Built concurrent Kafka consumer in Scala with Akka, improved performance 500x from Python predecessor

## Projects

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### Block Blog (Hack the North 2016 winner)

A blockchain based micro blogging social network. Implemented custom blockchain application using Tendermint to store users and posts. Golang, TMSP, Python, GCP, React, ES6.

### Reinforcement Learning Rubix Cube Solver

Uses DQN to learn how to solve a rubix cube (based on Karpathy's Pong From Pixels) using Python and numpy.

## Launchaco

Name and build products and websites (#2 on Producthunt, #14 all time Show HN)

**Role:** Built backed API, parsed zone files and created Datastore table, contributed to frontend

**Tech stack:** JavaScript, Golang, GCP Datastore, Kubernetes, Docker

## Lumo

Smart light switch with internet connectivity for remote usage, monitors user power consumption patterns and aids them in minimizing power usage.

**Role:** Built microservice based backend for handling events from MQTT, storing events, making predictions, and allowing control of Lumo via app with minimal latency.

**Tech stack:** Golang, gRPC, Docker, Kubernetes, MQTT

## Extracurricular

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### UVIC SDAML Club

Executive Technical

Lead

(Software Development and Applied Machine Learning)

- Organize workshops on topics related to machine learning and software development
- Keep road map of the club's technical knowledge goals and curriculum
- Workshops lead: Intro to Regression, Classification: Logistic Regression, Comparing K-Nearest Neighbor and Logistic Regression as classifiers

### UVIC WebDev Club

Technical

Presenter/Co-President

[github.com/uvicwebdev](https://github.com/uvicwebdev)

- Lead workshops and contribute to club organization and planning
- Workshops lead: Intro to JavaScript, How to Websockets: build a chat app with searchable message history, Web App from step 0: building a Twitter clone

### Hack Victoria

Lead Organizer

[hackvictoria.com](https://hackvictoria.com)

- 24-hour hackathon focused on building tech to improve the community
- 20 teams, 60 participants, over \$2000 of prizes and free food

## Fields of interest

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Reinforcement learning, Recurrent neural networks, Deep learning, Distributed systems, Blockchain technology, Big data

## Skills

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### Languages

- **Proficient:** Python, Go, JavaScript
- **Working Knowledge:** Scala, Java, C

### Technologies / Frameworks / Methodologies

Pachyderm, Hadoop, Spark, Kafka, Kubernetes, gRPC, NodeJS, Flask, SocketIO, React, AWS, ElasticSearch, Git, MongoDB, Numpy, Pandas, Sci-Kit Learn, TensorFlow, Pytorch, NodeJS, Flask, SocketIO, React, Agile, TDD/BDD, Event Storming/Event Sourcing

References available upon request