Brad Burega

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Education

University of Alberta — *Edmonton, AB*

M.S. Computing Science — *Sep. 2019 - Present*

- Researching reinforcement learning as a thesis-based Master's student.
- Teaching assistant for CMPUT 274 and 275: Introduction to Tangible Computing.

University of British Columbia — *Vancouver, BC*

B.S. Combined Honours Computer Science and Physics — *Sep. 2013 - May 2018*

- Graduated with distinction and named to Dean's Honours List in every academic term.
- Teaching assistant for CPSC 320: Intermediate Algorithm Design and Analysis.

Technical Skills

Languages and Libraries Python, Java, C++, Bash, SQL, Numpy, PyTorch, Scikit-learn, Pandas

Frameworks and Tools Git, SignalFX, Splunk, Jupyter

Work Experience

Yelp — *San Francisco, CA*

Search and Data Mining Engineer — *Aug. 2018 - Aug. 2019*

- Led a project to integrate user preferences into search models, allowing users to shape their search results based on their interests.
- Trained and deployed learning-to-rank models in Python, improving relevance of search results in important verticals. Analyzed the online impact of models on company metrics.
- Extended a Java backend service to sort icons on the Yelp iOS app based on the user's selected preferences.

Yelp — *San Francisco, CA*

Software Engineer Intern — *May 2017 - Aug. 2017*

- Designed an experiment to increase user engagement on the iOS platform while collecting and analyzing data using Google Analytics.
- Modified a Python API to query feature data from a MySQL database and return predictions from a machine learning model stored on Cassandra. Used predictions to rank business reviews by relevancy.

Optigo Networks — *Vancouver, BC*

Software Developer Co-op — *May 2016 - Aug. 2016*

- Designed and implemented a customer billing and subscription system for a Meteor.js web app using the Stripe API. Stored and queried customer information from MongoDB.
- Developed a tabular data visualization in Javascript which allowed users to examine building network data dynamically queried from InfluxDB.
- Improved security by re-engineering file upload and storage on AWS.

SAP — *Vancouver, BC*

Software Developer in Test — *Jan. 2015 - Aug. 2015*

- Improved automated test framework by comparing expected HiveQL queries against programmatically generated queries using Java and JUnit.
- Collaborated with senior developers to design and execute test plans for a feature which allowed users to import data from Hadoop to SAP Lumira.

Selected Projects

Actor Critic Performance Evaluation

- Implemented actor-critic with eligibility traces using Python and Numpy.
- Developed a version of the Mountain Car environment with continuous actions. Empirically evaluated actor-critic's sensitivity to hyperparameters by running tests on Mountain Car.

DEAP-3600 Photomultiplier Characterization

- Research conducted as part of an undergraduate thesis in physics supervised by Dr. Pietro Giampa.
- Using C++ and the Root framework, implemented an algorithm to determine the probabilities of observing spurious particle interactions in the photomultiplier detectors of the DEAP-3600 experiment.
- Created data visualizations communicating changing particle interaction probabilities through time, allowing researchers to better account for these events when analyzing experiment data.