BRIAN SINCLAIR

Software Developer | Problem Solver

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EXPERIENCES

Thalmic Labs
Feb 2015 – Present

Machine Learning Software Engineer – Kitchener, Canada

One of a small team of contributors developing a multipurpose evaluation framework for machine learning models in Python. Performed in-depth literary reviews and implementations of features and filtering methods for time series signals. Reviewed code and made small design changes to models developed in C.

Thalmic Labs
Sept 2014 – Feb 2015

Data Specialist – Kitchener, Canada

Developed data pipeline in Python, and acted as project manager between software, firmware, hardware, and machine learning teams. Designed protocols, lead and trained a team of data collectors, and scheduled large data collection initiative for the Myo Armband.

Kiwi Wearable Technologies
July 2014 – Nov 2014

Machine Learning Contractor – Toronto, Canada

Performed feature selection process for wrist mounted IMU devices. Investigated and performed survey of machine learning models using libraries for rapid prototyping. Delivered models and evaluation methods in Python, and summarized results and conclusions in a technical paper.

Morgan Solar
Sept 2012 – Dec 2012

R&D Engineering Intern – Toronto, Canada

Designed and developed an automation tool using LabVIEW for calibration of tracker-mounted solar panels using electrical, software, and mechanical components. Utilized optimization techniques with a feedback system to find optimal power. Sculpted various Python scripts to automate daily data collection and database population.

Achievers
May 2011 – Aug 2011

Software Developer – Toronto, Canada

Aided in the optimizing of numerous SQL database queries for product newsfeed with behavior similar to Facebook's. One of two lead developers on program upgrades from Java based platform to a PHP platform as well as being responsible for the development and maintenance of a user Dashboard.

SKILLS & TOOLS

Skills
Software Development, Machine Learning, Signal Processing, Optimization, Constraint Programming, Statistics, Data Analysis, Databases, Agile practices

Tools
Python, Pandas, Git, MATLAB, SQL; as well as familiarity in MongoDB, C/C++, and LabVIEW

Languages
English, French (currently A1), extremely interested in learning new languages

Courses
Machine Intelligence, Pattern Recognition, Data Structures & Algorithms, Optimization, Design Optimization under Probabilistic Uncertainty, Probability & Statistics

EDUCATION

University of Waterloo
2009 – 2014

B.A.Sc. Honours Systems Design Engineering – Waterloo, Canada

Centering on finding holistic, interdisciplinary approaches to solving complex problems with a focus towards product development, and software design.

PROJECTS & AFFILIATIONS

Machine Learning
Oct 2015 – Jan 2016

Neural Networks for Machine Learning
A course taught by Geoffrey Hinton that focuses on concepts such as recurrent neural networks, unsupervised pre-training using Restricted Boltzmann Machines, modeling hierarchical structure, and recent applications of deep neural networks.

Machine Learning
Jan 2014 – April 2014

NCAA March Madness Tournament Prediction
A feedforward artificial neural network trained using back-propagation, used to simulate and predict the results of the NCAA basketball tournament. Implemented in Python, the network predicted all match-ups, and estimated probabilities of each outcome.

Optimization
Jan 2014 – April 2014

Betting Strategies for NCAA March Madness Brackets
Probabilistic optimization was used to maximize return on investment for betting, by means of probabilities derived in the above model. This was accomplished by extending methods from Mean-Variance Modern Portfolio Theory, and Dynamic Programming.

Divie
Jan 2013 – April 2013

Lead Back-End Developer and Project Coordinator – Waterloo, Canada
A team design project creating a web application for optimizing fair and equitable division of assets in the event of post-mortem estate division. Responsible for PostgreSQL database development, query optimizations, and project management.

UW Bike Centre
Jan 2013 – Jan 2015

Bike Mechanic – Waterloo, Canada
Volunteering to do what I enjoy, fixing bikes or giving advice to those that need it.

OTHER EXPERIENCES

Deloitte
May 2013 – Aug 2013

Business Technology Analyst – Vancouver, Canada

OpenText
Sept 2010 – Dec 2010

Technical Writer – Waterloo, Canada

General Dynamics
Jan 2010 – April 2010

Systems Design Engineer – Ottawa, Canada

INTERESTS

Great Outdoors   Hiking, Rock Climbing, Road Cycling, Canoeing, Surfing, Traveling on a Shoestring

Engineering   Industrial Design, Alternative Energy, Bicycle Project Builds

REFERENCES

Available upon request