

LAWRENCE PANG

✉ lypang@edu.uwaterloo.ca [lpang36.github.io](https://github.com/lpang36) ☎ 647-471-1486 [in lawrencepang36](#) [lpang36](#)

SKILLS

GENERAL: Python, Java, C++, MATLAB, Scala, Solidity, Bash, Git, Linux

DATA SCIENCE: R, Spark + Spark ML, TensorFlow, Pandas, Keras, OpenCV, Kafka, xgboost, Tesseract, scikit-learn

DATABASE: SQL, ElasticSearch, AWS (S3, DynamoDB), MongoDB, Hadoop

WEB: JavaScript, React, AWS (Lambda, API Gateway, SQS), Node, Django, d3.js, Express, Flask

EMPLOYMENT

KPMG

Data Intern (Machine Learning, Data Engineering, Full-Stack Development)

- Clustered document templates using **Agglomerative Clustering** in **Spark** and **Spark ML**, correctly classifying **95%** of documents
- Extracted tabular information from unstructured data with **pandas**, **SQL Server**, and **Tesseract OCR**, by designing a novel **fuzzy matching algorithm**
- Successfully predicted **97%** of employee attrition events with **xgboost** model
- Led development of interactive **d3.js** visualization of employee relationships and implemented **tree algorithms**

SUNNYBROOK RESEARCH INSTITUTE

Software Intern (Machine Learning, Image Processing)

- Created **MATLAB** software to automatically detect anatomical structures in MRI images
- Increased efficiency of segmentation process by **80-90%** with **image morphology** techniques and **K-Means Clustering**

UNIVERSITY OF WATERLOO

Undergraduate Research Assistant (Deep Learning)

- Automatically fix bugs using **sequence to sequence deep learning** models in **Tensorflow**

PROJECTS

OURBLOCK (PYTHON, AWS, ELASTICSEARCH, FLASK)

- Community safety app which placed **Top 10 of 1500+** contestants at the **TechCrunch Disrupt SF 2018** hackathon
- Developed **serverless backend** with **AWS Lambda**, **S3**, **SQS**, and **API Gateway**, and stored and queried data using **ElasticSearch**
- Classified crimes using a **Support Vector Classifier** with **scikit-learn** and **NLTK**, and posted messages to **Ethereum network** with **Solidity**

NEWS VISUALIZER (PYTHON, REACT, AWS, ELASTICSEARCH)

- Visualize trending news topics and relationships between newsmakers with **React**, **d3.js** and **natural language processing**
- Performed **named entity recognition** using **NLTK** and indexed articles in **ElasticSearch**
- Developed **serverless backend** with **AWS Lambda**, **S3**, and **API Gateway**

SOCCER SENTIMETER (PYTHON, DJANGO, SQLITE)

- Created dynamic website in **Django** tracking Twitter sentiment of soccer teams, with a clean, responsive design
- Used **natural language processing** and various APIs (Google Maps, Twitter, Highcharts, MediaWiki, TextBlob) to generate an **SQLite3** database

INTELLIGENT LIGHTING SYSTEM (C++)

- Created an intelligent mood lighting project running on a **Linux embedded system**
- Designed and implemented **facial detection** and **image morphology algorithms** from scratch

OPENAI GYM (PYTHON, TENSORFLOW)

- Solved OpenAI environments using **reinforcement learning algorithms** such as **Q-Learning** and **SARSA** with **TensorFlow**

EDUCATION

University of Waterloo

Software Engineering 2022

GPA: 94/100

Online Courses

Big Data With Scala and Spark (EPF Lausanne)

Data Analysis With R (Facebook)

Deep Learning (Google)

Big Data Applications: Real-Time Streaming (Yandex)

AWARDS

Sept. 2018	TechCrunch Disrupt SF Hackathon · TOP 10 OF 1500+ CONTESTANTS
Sept. 2018	Hack the North · 2ND PLACE, FACEBOOK PRIZE
Aug. 2018	Leetcode · TOP 1% OF CONTESTANTS
July 2016	International Linguistics Olympiad · TEAM CANADA
Jan. 2017	Canadian Senior Mathematics Challenge · NATIONAL CHAMPION