

Laura Dang

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SUMMARY

- **Languages:** Python • C++ • Bash • SQL • HTML • CSS
- **Frameworks:** Flask • PyTorch • Django • Laravel
- **Tools & Technologies:** Linux • Docker • MySQL • PostgreSQL • SQLAlchemy • Pandas • Selenium • VSCode • Git • Jira

WORK EXPERIENCE

Soapbox Innovations Inc. – Machine Learning Engineer

January 2020 – April 2020

- Developed scalable REST API (**Flask**, **MySQL**, **Docker**, **Gunicorn**) to provide machine learning web services for 100 000+ users
- Created meeting recommender based on Google calendar events by training a multi-feature **recurrent neural network** with **TensorFlow Keras**, achieving **90.1%** validation accuracy
- Built **ETL** pipeline that trains and uploads NLP models to **AWS S3** for 2600+ teams in a multithreaded database environment
- Developed **Rasa NLU** chatbot using intent classification & **named entity recognition** that parses conversational commands
- Improved validation accuracy of text classifier by **12%** with fast.ai through hyperparameter tuning and data cleaning
- Implemented automated API **continuous integration/unit testing** that mocks AWS services and **SQLAlchemy** databases

Fairtax Grants and Incentives Inc. – Junior Software Developer

May 2019 – Present

- Full stack development for internal web applications using **Django**, **Laravel**, **PostgreSQL**, **MySQL**, **Vue.js**, and **Vagrant**
- Prototyped keyword extractor that uses **TF-IDF** and text vectorizers from **scikit-learn** to find keywords in 4000+ MySQL entries
- Developed automated **Python** web scraper that extracts, normalizes, and inserts 130 000+ **JSON** entries into **PostgreSQL**
- Designed & developed analytics dashboard, styled with **CSS** grids, that retrieves stats from internal **Django API** using **Vue.js**
- Created **PyQT** GUI that assists in parsing PDF tables into CSVs using **OpenCV** to automatically crop table sections
- Scraped and cleaned unstructured data from 140+ websites and PDFs into CSVs/Excels using **Pandas** and **Beautiful Soup**

PROJECTS

Automatic Image Colorization – github.com/lauradang/automatic-image-colorization

April 2020

- Built encoder-decoder **convolutional neural network** to automatically colorize grayscale images using **PyTorch**
- Utilized methods outlined in Baldassare et al.'s "Image Colorization using CNNs and Inception-Resnet-V2" research paper
- Trained network with 60 000+ images, preprocessed using **PyTorch transforms** and **NumPy** RGB/LAB array manipulations

Instrument Audio Classifier – github.com/lauradang/audio-classification

February 2020

- Trained convolutional neural network with **Keras** to classify WAV files with instruments, achieving **97.3%** validation accuracy
- Applied signal processing and Fourier transform using **scipy** to visualize frequency/time series and extract **MFCCs**
- Preprocessed 21 000+ sound samples by determining threshold envelopes of audio signals to remove dead sound space

FYOUZE Social Media Consolidator – github.com/lauradang/FYOUZE

September 2019

- Created networking website to connect on multiple social media platforms simultaneously for Hack the North 2019
- Developed back-end using **Flask** and **Selenium** web scrapers that add contacts on Facebook, Instagram, and LinkedIn
- Utilized CRUD operations with **Firebase** real-time database to store users and their respective social media URLs

EDUCATION

University of Waterloo

Sept 2018 – Apr 2023

Bachelor of Mathematics, Double Major in Statistics and Computational Math

- Term's Dean's Honours List (Spring 2020), President's Scholarship of Distinction (Fall 2018)
- **Coursework:** Object-Oriented Software Development (**C++**, **Bash**), Data Types and Structures (**Python**)

AWARDS

- **RU Hacks Winner (Track Challenge)** – Machine learning tool that collects advertising demographic information June 2019