MOUSTAFA ELSISY

CONTACT & PORTFOLIO

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EDUCATION

Memorial University of Newfoundland
Sep. 2016 - Dec. 2019
B.Sc. (Hons), Computer Science
GPA: 4.0

SKILLS

Languages:
Python, JavaScript, Dart, PHP, Java, Bash, HTML5/SCSS, C++, PAWN

Frameworks/Tools/Other:
Scikit-learn, AWS, React, Keras, Laravel, Express, AngularDart, Tensorflow, MySQL, DynamoDB, Docker

DISTINCTIONS

- **Dean of Science Book Prize 2017-2018**
- **Faculty of Science Dean's List 2017-2018, 2016-2017**
- **International Undergraduate Academic Award 2018-2019, 2017-2018, 2016-2017**

SOCIETIES

- **CS Society 2017-2018 Technology Officer**

  Led various student workshops on Git, Laravel, React, ML and others

EXPERIENCE

Google Apr. 2019 - Jul. 2019 (14w)

Software Engineering Intern - Kirkland, WA, US

- Constructed an automated canonical definition of multiple sources of code, by implementing a language parser based on an Abstract Syntax Tree in Dart, and integrating it with a filesystem watcher
- Decreased the running time of integration tests from ~2h30mins to ~30mins, by capitalizing on the caching of repeated operations across parallel tests

Mysa Jul. 2018 - Apr. 2019 (10mo)

Software Developer - St. John's , NL, Canada

- Pioneered a machine learning pipeline using Scikit-learn, Docker and AWS Batch, Lambda, CloudWatch and DynamoDB, to quarter the relative error of time-to-setpoint prediction from 58% to 13% and boost energy savings
- Developed temperature correction models, by programming Arduino loggers for data collection, aggregating data using Pandas, and applying feature+model selection using Scikit-learn

Memorial University of Newfoundland May 2018 - Aug. 2018 (4mo)

Undergraduate Research Assistant - St. John's , NL, Canada

- Investigated enhancements to generative ML models that increase entropy of output distributions, by applying Boosting techniques to GANs
- Proposed novel methods of encoding sequential data, such as music, in a form that optimises for GANs and other non-sequential models

HeyOrca! May 2017 - Jun. 2018 (1yr)

Junior Web Developer - St. John's , NL, Canada

- Quadrupled the speed of critical services through managed asynchronization of Laravel queues, optimization of data structures and logic refactoring
- Rebuilt and enhanced the frontend using ReactJS, along with Web Sockets and REST APIs, in order to create a more performant and resilient SPA
- Reduced the SPA's bundle size by ~40%, through proper management of dependencies and Webpack builds for all frontend micro-services

PUBLICATIONS / DISSERTATIONS

Honours Dissertation: Utilizing RNNs and Ensemble Learning for Enhanced Bacterial sRNA Classification

- Proposed an ensemble of a Random Forest and a Recurrent Neural Network, which has been observed to yield an Average Precision score x1.3 closer to a perfect classifier than the literature (PDF)

GANs & Reels (In progress)

- Implementing a Generative Adversarial Network in Keras, that generates novel Irish music from samples of Irish melodies (Site)

PROJECTS

ML Rock-Paper-Scissors

- Constructed a Rock-Paper-Scissors tournament that pitches feed-forward networks against a range of AI algorithms and studies their performance

PHP Components & Personal Portfolio

- Devised a modular architecture using raw PHP that mimics design patterns common in React applications, and used it to implement my portfolio site

Google CodeU - Summer 2018

- Enhanced an existing Java chat app, by using the DialogFlow API to create a conversational chat bot capable of NLP and message delivery on request