MARCUS CHIAM

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TECHNICAL SKILLS

- Languages: Python, R, Java, C and SQL
- IDEs: Eclipse, Pycharm and IDLE
- Libraries: Keras and Pytorch
- Version Control: Git

EDUCATION

University of Toronto
Bachelor of Science
Expected Apr 2019

- Bioinformatics and Computational Biology Specialist
- Molecular Genetics and Microbiology Major
- University of Toronto Scholar
- Andrew Alexander Kinghorn Scholarship
- University of Toronto Space Design Contest First Place Award

COURSEWORK

- Machine Learning and Data Mining
- Neural Networks and Deep Learning
- Natural Language Computing
- Introduction to Artificial Intelligence
- Introduction to Databases
- Software Design
- Software Tools and Systems Programming
- Data Structures and Analysis
- Algorithm Design, Analysis & Complexity
- Statistics for Computer Scientists
- Applied Bioinformatics

COMPETITIONS

- HackMIT 2018 – Top 10 and received RBC innovation award
- Hack the 6ix 2018
- U of T Hacks 2018
- Orbis Challenge 2017/2018

WORK EXPERIENCE

Data Scientist • RBC • April 2018 – August 2018
- Tasked with creating an AI-based recommender system to provide client-specific data insights for fixed-income salespeople
- Managed team objectives, conducted interviews with end-users, developed pipelines for data processing and feature engineering
- Created machine learning models for classifying clients and bonds, as well as predicting bonds for specific clients based on their historical data
- Provisional patent filed for this product

Research Student • Krembil Research Institute • Sept 2018 – April 2019
- U of T's Bioinformatics and Computational Biology research project course
- Creating a comprehensive database that consolidates drug, protein and gene data and predicts the relationships between each biological space
- Using data imputation and machine learning techniques such as matrix factorization to make novel predictions on drug-target interactions

Research Student • Princess Margaret Cancer Centre • Sept 2018 – April 2019
- U of T's Bioinformatics and Computational Biology research project course
- Exploring novel biomarkers predictive of drug response from RNA sequencing and pharmacological profile data sets
- Using machine learning techniques to investigate and develop univariate and multivariate feature associations, that are predictive of drug response

PROJECTS

Structurall • HackMIT • Sept 2018
- An application that uses voice transcription and sentiment analysis to structure heavily underutilized call audio in the capital markets industry into queryable data that can additionally be used in statistical and machine learning models
- Included a feature to predict credit ratings of bonds using a neural network
- Won top 10 at HackMIT and was runner-up for RBC's prize of "Best Innovative Use of Artificial Intelligence, Data Science, & Machine Learning"

Recommender System for Bonds • RBC • Aug 2018
- Part of RBC's Amplify program where we were tasked to create an AI-based recommender system to recommend bonds for salespeople
- Used a combination of feature engineering, clustering, neural networks and matrix factorization to provide novel client-specific data insights to salespeople

Cart pole AI balancer • Personal Project • Aug 2018
- Made an AI to balance a pole on a cart; a classic control problem for dynamic systems, meant to serve as a proof of concept for testing AI algorithms
- Used reinforcement learning, implementing an epsilon-greedy algorithm with discounted rewards and a policy gradient powered by a neural network

Promoter site prediction • Kaggle • July 2018
- Part of a Kaggle competition where the goal was to predict whether a given DNA sequence would have a high binding affinity to 5 different sigma factors
- Computed string similarities and used them as feature inputs for multiple binary classifier neural networks

Blackjack AI • Personal Project • July 2018
- Created a blackjack game and a separate AI using a neural network
- Extracted features from game state, including player and dealer hands as well as deck compositions, in order to feed into the neural network as inputs