# JUSTIN D'SOUZA

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## TECHNICAL SKILLS

- **Languages:** C/C++, Python, R, Matlab, HTML5/CSS3, Java, JavaScript (Node.js), SQL
- **Libraries:** TensorFlow, Nervana Neon, Scikit-learn, Pandas, NumPy, SciPy, Matplotlib
- **Tools:** Git, SVN, Postman, Visual Studio Code, Sublime Text, Eclipse, RStudio
- **Machine Learning Concepts:** Linear/Logistic Regression, Neural Networks, Support Vector Machines, Natural Language Processing, Deep Learning, Bayesian Statistics

## WORK EXPERIENCE

Manulife / John Hancock – *Innovation Software Engineer* May – Sept. 2016

- Researched and effectuated cognitive computing techniques to equip Portfolio Managers with intelligent augmentation tools.
- Integrated **Natural Language Processing APIs** with Node.js and Python scripts to acquire financial text data and feed neural network for **data processing** and **classification**.
- Utilized TensorFlow to build **word2vec model** and **recurrent neural network** from scratch for enhanced financial text analysis of hundreds of data files.

YMCA of Greater Toronto – *Outdoor Adventure Camp Counsellor* June – Sept. 2015

- Programmed and supervised **team-building** activities including arts and crafts, field-games, and shelter building for 10-12 campers aged 6-12 years on a daily basis.
- Implemented creative theme day plans on a weekly basis for **50+** campers through **effective collaboration** with other staff, resulting in 'outstanding' performance on final evaluation.

## PROJECTS

PillRemind Aug. 2016 – present

- Start-up funded by **Velocity Residence** program, engineering a smart pill container to connect with mobile application for user reminder system. Uses **Intel Edison** for Wi-Fi.
- Currently working on design and software for user notification system, while co-ordinating with 2 team members for platform integration.

Discover (discover-beta.github.io) July 2016 – present

- Android application which incorporates **predictive analytics** and a **GPS navigation system** to allow users to find social events tailored to their interests around them in real-time.
- Currently implementing **decision-tree learning** to bucket users into shared interest groups.

Stock Market Simulator (github.com/jqdsouza/MLForTrading) June 2016

- Created market simulator which accepts trading orders and tracks a portfolio fund's **Sharpe ratio** and cumulative returns against those of S&P 500. Return on Investment of fund is **~7.9%**.

Flight Delay Predictor (github.com/jqdsouza/FlightDelayPredictor) June 2016

- Trained **~33,000** rows of test data sourced from U.S. Bureau of Transportation Statistics to predict whether flights would arrive 15+ minutes after scheduled arrival time.
- Achieved **~80%** prediction accuracy with **Logistic Regression** model, but improved specificity metric by a **factor of 7** utilizing **Random Forest** algorithm.

VCommerce – Manulife / John Hancock (github.com/jqdsouza/VCommerce) May 2016

- Mobile application utilizing innovative Virtual Reality platform and integrating Manulife and CIBC's financial services and customer base to simplify big life decisions for millennials.
- **Led 3 interns** and generated design, business plan, and proof-of-concept from scratch.

## EDUCATION

Bachelor of Applied Science (B.A.Sc.) in Computer Engineering Sept. 2015 – May 2020
*University of Waterloo*