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NITHILASARAVANAN KUPPAN

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EDUCATION

McGill University — **Montreal, Canada** — **Fall 2019 – Summer 2022**
- Master of Science in Electrical & Computer Engineering (Thesis), **GPA: 3.95/4**

Netaji Subhas Institute of Technology — **New Delhi, India** — **July 2013 – June 2017**
- Bachelor of Engineering in Instrumentation and Control Engineering, **First Class with Distinction** *(Merit Scholarship)*

TECHNICAL SKILLS

- **SQL** (Impala, Spark, Teradata, MySQL), **Python** (NumPy, Pandas, PyTorch, Scikit-learn, OpenCV, TensorFlow, SciPy, NLTK, PyBullet, FilterPy, BeautifulSoup, Matplotlib, Bokeh, Seaborn), REST API, LINUX CLI, Shell scripting, LaTeX, & HTML
- **Data Science Studio** (DSS)- with HDFS & ML, **Tableau**, Alteryx, LabVIEW, Excel & PowerPoint, Alation, Informatica, & Microstrategy

INDUSTRY EXPERIENCE

Business Technology Associate Consultant — **ZS Associates, India** — **Jul 2017 - Aug 2019**
- Fast Track promotion to 'Associate Consultant' within 23 months against the firm's average of 30 months
- Led a team of 4 Associates as part of the 'Virtual Analytics Workbench HyperCare' initiative - assisted the client's *Digital Analytics Enablement* lead on problems ranging from metadata analytics, database management, API-based automation of critical processes to predicting & managing the usage of advanced analytics platforms used across the client space; reduced errors & downtimes by $\sim$75%
- Pioneered creation of a novel & streamlined *SOP* designed to reduce processing times of repetitive technical processes; saved $\sim$300+ man-hours in the first month of adoption
- Managed a team of 2 Associates on Digital Analytics projects across Europe leveraging Big Data toolkits on DSS that fed to multiple Tableau workbooks viewed by 4000+ people worldwide; insights enabled a $\sim$35% increase in traffic across all of the client's websites
- Fabricated process pipelines leveraging advanced ML algorithms to predict brand loyalties of HCPs for a portfolio of 14+ Pharma products that engender a total revenue of $\$3$B a year leading to a strategized marketing plan and saving the client over $\$5$M a year
- Accelerated the growth of 'Advanced Analytics Team' by developing complete solutions to complex R&D process tracking problems, ML-based forecasting of patient events, and innovative personalized marketing solutions for drugs worth $\$1$B+ in annual sales
- Recognized as an ETL & Tableau expert by the firm - selected as the only Associate (1/80) to work on a competitive RFP involving a technical business case; invested $\sim$60 hours in training 10+ Associates on SQL/Tableau

ACADEMIC EXPERIENCE

Graduate Research Assistant — **McGill University, Canada** — **Oct 2019 - Present**
- Developed a Python-based Estimation and Filtering library for complex linear and non-linear multi-order systems capable of identifying system parameters from over -30dB SNR input signals with negligible RMSEs
- Implemented an updated Kernel-based multiple regression algorithm for estimation and rigorously compared it with an augmented Kalman Filter with Rauch-Tung-Striebel smoother to establish superior performance of the former
- Authored master's thesis describing the research incisively; achieved spectacular review from external and supervisor

Teaching Assistant — **McGill University, Canada** — **Jan 2020 - May 2022**
- **YCBS 256: Data Science for Business Decisions** - Guided 160+ students over the course of 3 semesters with queries on Alteryx & Tableau; Channeled discussions on solving cases using Data Science; received verbal commendations from course facilitators
- **COMP 598: Data Science** - Facilitated weekly engaging sessions to a class of 180+ students on AWS EC2, Shell scripting, CLI, Python libraries, APIs, Web Scraping & Unit testing; achieved outstanding feedback from $\sim$ 92% of students in course evaluations

PROJECTS

- **Image Classification with CNN:** Assessed Deep Learning algorithms to classify CIFAR-10 dataset; CNN with 3 blocks of Conv layers supported by Stochastic Gradient Descent and L2 regularization performed *exceptionally* well
- **Deep Learning-based Grasp Detection Models:** Established a simulation pipeline for grasp success prediction on Cornell Grasping Dataset using pre-trained AlexNet and ResNet18 models on a Google Compute server; achieved $\sim$92% accuracy
- **Collision and Deadlock free Path planning for Kuka IIWA robot:** Executed Inverse Kinematics control leveraging Dijkstra's algorithm to find a perfect path for the end effector of a Kuka IIWA 7 DoF robot
- **Imitation Learning on Kuka IIWA robot:** Implemented Imitation learning as a Regression problem using Random Forest, predicting velocities used to move the end effector to write *words* in the simulation
- **Textual Data Classification:** Examined textual classification using Decision Trees, SVM, AdaBoost, Random Forest and Multinomial NB leveraging Lemmatization, POS tagging, and GridSearchCV across multiple datasets; attained *best-in-class* evaluation
- **ML Algorithms from Scratch:** Investigated the performance of Gaussian Naive Bayes and Logistic Regression with K-fold CV and feature engineering across 4 ICS UCI datasets, coded from scratch in Python; achieved benchmark evaluation metrics
- **Publication in NCAA, Springer:** Innovated an Intelligent 2 layer fractional-order Robust Fuzzy controller for disturbance rejection using CSA in Integrated (Hybrid) Power Systems; published work in journal with overwhelmingly positive reviews