Raghunath Vadakkan Purushotham

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OBJECTIVE : Seeking full time opportunities in Software Development and Machine Learning starting from June 2019.

EDUCATION

Virginia Tech, Blacksburg, VA GPA (3.83/4) **Expected May 2019**
Master's Degree, Computer Engineering (Specializing in Software and Machine Intelligence)
Courses: Computer Vision, Machine Learning, Statistics, Advanced Parallel Computation, Advanced Computer Architecture, Real Time OS.

National Institute of Technology Warangal, India **May 2016**
Bachelor's Degree, Electronics and Communication Engineering
Selected courses: Signal Processing, Data Structures, Stochastic Processes, OS, Digital Design, Microprocessors, Devices and Circuits.

WORK EXPERIENCE

Co-op Data Scientist, Digital Experience Team, Nokia, Austin, US **May 2018 – Dec 2018**

- Synthesized large datasets for NB-IoT device battery discharge using parallelized and optimized codes in Python.
- Developed classification models to detect End-of-Life phase identification and regression models for remaining battery life prediction through random forest, SVM and multi-layer perceptrons for long-life Li-ion batteries.
- Plotted data visualizations on Bokeh and Seaborn integrated with Python notebooks.

Applications Developer, Data Science Team, Optum (United Health Group), Bangalore, India **Jul 2016-Aug 2017**

- Applied machine learning models on US health-insurance claims data after ETL operations in Hadoop using Apache Pig.
- Developed predictive models on R and Python to identify disease specific future high-risk patients in an Agile Environment.

RESEARCH EXPERIENCE

Graduate Student Researcher, Unmanned Aerial Systems Lab, Virginia Tech **Feb 2018 – Apr 2018**

- Worked under Prof. Kevin Kochersberger in the development and implementation of path-planning algorithms for autonomous robots after collecting data through unmanned aerial systems. Work focused on Computer Vision and Machine Learning.

Research Assistant, Computational Intelligence Lab, Indian Institute of Science, Bangalore, India. **Summer 2014**

- Solved the difficulties of cluster initialization sensitivity and undesired locally optimum solutions in conventional clustering methods with a special focus on image processing.
- Developed a variance-based clustering algorithm and tested on datasets drawn from image processing and remote sensing.

SPECIALIZED SKILLS

Languages: Java, Python, C/C++, R/RStudio, MATLAB
Tools and Packages : SQL, Tensorflow, Tableau, JMP, scikit-learn, OpenCV, Hadoop, Git, Apache Pig, Hive, Spark
Technologies: Machine Learning, Computer Vision, Optimization Techniques, Parallel Computation, NLP, A/B Testing, Databases, Linux

PUBLICATION

Vibin Vijay*, **Raghunath VP***, Amarjot Singh, SN Omkar, *Variance Based Moving K-Means Algorithm*, published in IEEE IACC January 2017.

SELECTED PROJECTS

Vision Based Road Environment Mapping - ECE 5554: Computer Vision. **Oct – Dec 2017**

- Developed a lane detection and lane departure warning system aimed at increasing vehicular autonomy as a part of course project for ECE 5554: Computer Vision.
- Mapped the drivable region through road mapping and vehicle detection through a CNN with an external region proposal network and fine – tuning on CIFAR 10 dataset.

Operations on Reduced Ordered Binary Decision Diagrams (ROBDDs). **Jan – Feb 2018**

- Implemented ROBDDs in C++ with Dynamic Programming.
- Operations included equivalence checking, reduction operations and satisfiability counts for Boolean operations.

Time Series Modeling through Recurrent Neural Networks – ECE 5424G: Advanced Machine Learning. **Oct – Dec 2017**

- Investigated different RNN architectures in modeling stock exchange dataset drawn from Yahoo Finance.
- LSTM model implemented in Python and trained using a TensorFlow backend through Google Compute Engine.

Predicting NCAA Division-1 Basketball Tournament Brackets. **Feb – Mar 2017**

- Won Inter Agile-pod competition as a part of a three-member team within Optum to predict outcome of college basketball tournament through Machine Learning models.