KRISHNA PULLAKANDAM

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Objective

- Experienced Software professional pursuing Master's degree specializing in Statistics & Data Science, seeking Internship opportunities in Quantitative fields, for the Summer of 2019. With 4 years of professional work experience in Application Development, Research & Development, Database Engineering, Performance Engineering & Data Science

Education

North Carolina State University, Raleigh, NC Aug 2018 - May 2020

- Master's degree in Operations Research with Minor in Statistics & Certification in Data Science **GPA: 4.0**
- Graduate Coursework: Algorithms for Data Guided Business Intelligence - CSC 591, Bayesian Analysis - ST 540, Multivariate & Long. Data Analysis - ST 537, Experimental Statistics II - ST 516, Algorithmic Methods in NLP
- Certificates: Data Visualisation with R, R for Data Science

Indian Institute of Technology Madras, Chennai, India Aug 2010 - May 2014

- Bachelor's degree in Civil Engineering with Minor in Management **GPA: 7.6**
- Undergraduate Coursework: Probability & Statistics, Probability Methods in Civil Engineering, Operations Research

Work experience

Sensel Telematics Pvt. Ltd., Bangalore – *Software Consultant* Apr 2018 - June 2018

- Developed back end infrastructure of FIRM - Facial Identification & Recognition Module. Stack: OpenCV & Python
- Deployed the application on AWS EC2 & S3 infrastructure and designed mechanisms for scaling the application
- Stack: OpenFace framework, Python back end, OpenCV library image & video processing, PHP for report generation

Anuta Networks Pvt. Ltd., Bangalore – *Software Engineer* Dec 2016 - Feb 2018

- Developed back end infrastructure of ATOM, Data Center Device Network Orchestration Automation Product
- Refactored Multi-Tenant Architecture & RBAC - Rule Based Access Control module for performance improvements
- Redesigned event based notifications for client side using Web Socket communication protocol
- Implemented custom REST APIs and RPCs. Extended infrastructure support for Yang based models
- Conducted Performance bench marking between monolithic vs. micro services based architectures using Glowroot

Finastra Financial Software Pvt. Ltd., Bangalore – *Associate Software Engineer* June 2014 - Nov 2016

- Designed efficient data models to increase throughput of systems handling transaction volumes in terabyte databases
- Developed a Java based tool to automate Database level partitioning, resulted in a 200% increase in system throughput
- Developed an automation tool for upgrade and migration of data schema and data model for product upgrades, resulted in a 50% faster upgrade process & lead to an efficient Data Migration pipeline
- Developed a Java based report generation tool for monitoring database changes on staging & production systems
- Developed a platform agnostic monitoring application to report timely system health checks

Technical Skills

- Softwares: Linux, R, Python, Java, SQL, MATLAB, OpenCV, Git, Kafka, Tableau, Jupyter Notebook, Shell Scripting
- Frameworks & Libraries: TensorFlow, Apache Spark, Pandas, Numpy, Scipy, scikit-learn, Matplotlib, ggPlot2, Seaborn
- Techniques: A/B testing, Classification, Regression, Clustering, Random forest, Bayesian Inference, SVM, Neural Nets
- Databases: Oracle 12c/11g/10i, IBM DB2, Microsoft SQL Server, MySQL, Postgres SQL, MongoDB, Apache CouchDB
- Database Skills: Data Modeling, DB Administration, Performance Tuning, Database Partitioning, DDL, DML & DCL

Academic Projects

- **Music Recommender System using Collaborative filtering** (github.com/musicRecommderSystem)
  - Developed a Music Recommender system using Collaborative filtering & Alternating Least Squares Algorithm, using PySpark
  - Trained the model using implicit feedback. Performed parameter sweep to evaluate optimal model parameters. Achieved score of 95.294% for optimal rank evaluated using parameter sweep.
- **Twitter Sentiment Analysis using Naive Bayes Classifier** (github.com/twitterSentimentAnalysis)
  - Developed a model to perform Sentiment Analysis of real time tweets using Apache Spark, Apache Kafka & Python
  - Trained the model using **Naive Bayes Classifier** to learn the correct binary labels from a training set consisting of 16 million tweets. The model efficiently processed large data in less than 100 milliseconds
- **Market Segmentation with Python** (github.com/communityDetection)
  - Implemented an algorithm for community detection in multi attributed graphs to find market segments in a social network. Calculated influence propagation based on structural and attribute similarities
- **Network Properties with Apache Spark** (github.com/networkPropertiesSparkGraphFrames)
  - Implemented network properties like centrality and articulation points, to perform graph data mining on real and synthetic networks. Stack: PySpark, GraphFrames, networkx
- **Bitcoin Price Prediction using Bayesian Regression Technique** (github.com/bitcoinPricePrediction)
  - Implemented a model using Bayesian Regression technique to predict Bitcoin Price movements.
  - Back tested the model and observed the model generated profits of 89% in 50 days and has a Sharpe ratio of 4
- **Adwords Placement via Online Bipartite Graph Matching** (github.com/adwordsPlacement)
  - Employed online bipartite graph matching technique to compute optimal revenue for ad placements
  - Model achieved competitive ratios of 0.94, 0.99 & 0.69 using greedy, balance & msvv algorithms
- **Financial Portfolio Optimization** - OR 506 Algorithmic Methods in Non Linear Programming
  - Implemented a Multi-Objective programming paradigm to develop a portfolio optimization algorithm aimed to increase the returns and reduce the variance
  - Implemented using Penalty Methods for constrained optimization & Newtonś method for minimization. Plotted the Pareto front and performed Sensitivity analysis
- **Statistics in Data Science** - Experimental Statistics, Multivariate & Long Data Analysis, Applied Bayesian Analysis
  - Implemented Hypothesis Testing, Analysis of Variance & Linear Regression for frequentist & Bayesian approaches for Exploratory Data Analysis
  - Performed Multivariate analysis of variance, Principal Component Analysis (PCA) & Factor Analysis of multivariate data with visualizations using ggPlot, Bokeh, seaborn packages to obtain deeper insights into the data

Achievements

- Cleared IIT Entrance Exam, India, top 0.45 Percentile, 2010. Recipient of IIT Madras Merit Scholarship from 2010-14
- Cleared Regional Mathematical Olympiad, India, top 0.10 Percentile, 2009. Cleared KVPY top 0.50 Percentile, 2009

Positions of Responsibility

- Managed 30-member transportation team, handled a total budget of 500,000 INR. Efficiently cut down the expenses by 12.5%. Proposed policy changes which increased revenue by 50%.
- Coordinator for Puzzle Champ, Creative Productions, Internal Publicity & News Letter Teams, CEA fest, during academic year 2011-2012.

Community Work

- Campus ambassador for RoB (creates awareness about importance of clean beaches), successfully organized multiple info sessions about the impact of adverse beaches on bio diversity.
- Organized a beach cleanup session by involving local residents and student representatives, to clean up Broken Bridge beach in Chennai, which impacted the migration & egg laying patterns of Olive Ridley turtles

Extra Curricular Responsibilities

- Published CONTOUR, annual magazine of Department of Civil Engineering, IIT Madras
- Editor and Publisher of News Letter during CEA Fest'13