Manohar Vellala

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GitHub Available from *May 2024 - May 2025*

Education

Old Dominion University **Expected May 2025**
Master of Science in Computer Science; GPA: 3.8 *Norfolk, VA*
Relevant Coursework: *Web Programming (JavaScript, React, Node.JS), Data Visualization (Tableau, Seaborn), NLP (Sentiment Analysis,Virtual Assistants)*

B.N.M Institute Of Technology **Jul 2019 – Jun 2023**
Bachelor of Technology in Computer Science And Engineering; *Bangalore, India*

Skills

Languages: C , C++, Python, JavaScript, Java , HTML, CSS,PHP, SQL
Technical skills: Data Analysis, Data Visualization, Full Stack Development
Frameworks: React, Spring-Boot, Django, Flask, Angular, Node.JS, Numpy, Pandas, OpenRefine, Pytorch, TensorFlow
Tools: Microsoft Excel, Powerpoint, GCP, Tableau, Jira, Slack, Agile Methodology, Github, Scikit-learn
Databases: SQL, Postgres, AWS (Amazon RDS, DynamoDB), Neo4j, MongoDB

Soft skills: Data-driven, Communication, Strategic Thinker, Team Work, Collaborative
Certification: AlgoExpert.io (Data Structures And Algorithms, Time And Space Complexity Analysis)

Experience

Old Dominion University **Norfolk, Virginia,US**
Graduate Assistant - Software Developer *Aug. 2023 - Present*

- Revamped Map Communications Inc. login portal using **AWS Lambda**, enabling over 100K+ clients to securely access the portal. Utilized **OAuth 2.0** and **Twilio SMS API** for sending OTPs.
- Designed **CI/CD pipelines** using **Jenkins** to automate building, testing, and deployment of **Django, React, MongoDB** based virtual receptionist system for Map Communications Inc.
- Analyzed **2.3 million** datasets from iOS and Android app stores using **Tableau, Open Refine** to uncover key market trends. Identified significant disparities and User preferences in downloads, size, ratings.
- Engineered the VSorts™ cloud-based **SaaS** web app with cross-functional team (Product, Sales, Engineer, Support, Designers) of 5. Constructed **resuabel components** using **Material UI, Tailwind CSS.**

Indian Space Research Organisation **Bangalore, India**
Software Intern *Aug. 2021 - Oct. 2021*

- Designed, developed, and maintained the **Flask-based** Electronic Beam Software web application for I.S.R.O
- Introduced a **Logistic Regression** ML model and minimized the **Cross-Entropy Loss** to 2% using **Gradient Descent** method to intelligently update the coefficients, Predicting the intensity currents in the welding process.
- Applied **L1 regularization** to penalize large coefficients and prevent overfitting of the Model which helped in detecting anomalies in the welding process, saving **120+ Engineer hours**.

Projects

CS120.AI

- Innovated CS120.AI an **Angular, Django** based chatbot designed for courses at Old Dominion University.
- Harnessed the power of the **Transformers** library from **Hugging Face** to fine-tune the **BERT** model and developed **APIs** to seamlessly integrate it into CS120.AI serving as a **Large Language Model (LLM)**.
- This integration empowers CS120.AI to excel in tasks such as **Sentiment Analysis, Question Answering, Text Predictions, Text Generation**. Alleviated 30+ Teaching Assistant and Professor hours per semester.

Diabetes Prediction

- Conducted in-depth analysis of Diabetes Survey dataset, employing **PCA** and **feature engineering** methods to predict diabetes based on factors such as Blood Pressure, BMI, and Pregnancy.
- Implemented Supervised Learning models, including SVM, Logistic Regression, and Decision Tree. Identified and addressed **outliers** within clusters, employing **Soft-Margin SVM** with **Slack** to overcome constraints.

AI Crop Diagnosis

- Developed **Convolutional Neural Network** using **TensorFlow 2 Keras API** for classifying Areca Nut Images as Healthy or Diseased. Employed a CNN architecture with eight layers, including Convolution layers with **ReLU activation**, max **pooling layers**, and a final dense layer for prediction.

Awards

Best Research Intern, Hands On Lab, Old Dominion University

- Achieved this recognition for building an **SVM-ML Model** using accelerometer data streamed from **Apache Spark** to detect sudden movements in agitated patients.
- Boosted precision of the model to 85% through the application of the **Kernal Trick**, enabling it to capture more complex patterns in a higher-dimensional feature, contributing to increased safety of Alzheimer's patients.