SAMANWITHA VANNELDAS

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EDUCATION

Jawaharlal Nehru Technological University - Hyderabad   **June 2024**
B.Tech+M.Tech(Integrated Dual-Degree) in Computer Science and Engineering | GPA - **8.6/10**

EXPERIENCE

Honeywell Technology Solutions   Jan 2024 – Present
Software Engineer I   *Hyderabad, India*

- **Firmware Manager – Secure Upgrade & Diagnostics** – C#, WPF, REST/HTTPS, Multi-Threading
  - Engineered a multithreaded C# DLL and WPF front end that automate firmware upload, rollback, and log capture across modular controllers, achieving **99%+** first-pass success.
  - Designed end-to-end HTTPS workflows linking the desktop UI with the main processing module (VxWorks) and coordinating with network modules, cutting upgrade windows in half.
  - Implemented per-module progress tracking, signature validation, retry logic, and detailed error reporting, reducing root-cause analysis from hours to minutes.
- **Industrial Automation XML Migration Tool** – WPF, .NET, ANTLR4, SQLite
  - Built a desktop application that converts Rockwell L5X projects to PLCOpenXML for Codesys, cutting migration time by **70%**.
  - Created a custom ANTLR4 parser and rule-based engine to transform and validate 100 000 +-line XML files with near-zero defects.
  - Migrated storage from SQL Server to SQLite and added an MVVM interface with visual diff and log views, shrinking installer size and boosting performance by **40%**.
- **Neural Network-Based Real-Time Controller (UDC)** – PoC
  - Conducted a PoC on UDC by replacing PID with a Neural Network for real-time output control.
  - Achieved faster settling time with no overshoot, enhancing system stability and responsiveness by **90%**.

PROJECTS

CryptoLens | *React.js, Material-UI, Chart.js, Firebase, Axios*

- Developed a real-time cryptocurrency tracking web application leveraging CoinGecko APIs, providing dynamic market data, price trends, and historical analysis.
- Integrated secure user authentication and database management via Firebase, and optimized global state management using React Context API.
- Designed interactive visualizations with Chart.js to show coin trends over time.

Multilabel Leaf Classification: Comparative analysis of BRC and CNN | *Python, CNN, SVM, SSD*

- Created a proprietary dataset of 2,000+ high-resolution leaf images for multilabel classification tasks.
- Engineered and fine-tuned machine learning models utilizing Binary Relevance Classifier (BRC) and deep Convolutional Neural Networks (CNN) architectures.
- Developed SSD model for fast object detection and bounding box prediction.
- Conducted comparative performance analysis to enhance predictive accuracy and automate plant species recognition.

SKILLS

Languages & Tech.	Java, C#, DSA, Python, JavaScript, SQL, PHP, MVC, C, Node.js, .NET & .NET Core, ASP.NET Core, ASP.NET Web API, Entity Framework, MVVM design pattern
Frameworks & Lib.	WPF, Winforms, React.js, Material-UI, Tailwind CSS, Bootstrap
Tools & Databases	MySQL, SQLite, PostgreSQL, SQL Server (SSMS), Git

ACHIEVEMENTS

- **2× Bravo Award – Honeywell PMC Business Group**: Recognized as Best Employee for delivering a PoC of a software tool that enabled migration from Rockwell to Honeywell PLCs project, enabling customer adoption.
- **Recognitions**: Received business-level recognition for rapidly developing a secure, modular firmware upgrade and diagnostics tool that significantly reduced upgrade time and improved embedded system reliability.