Vinaya Varshini Ravichandran

+1 940-901-5557 | vinaya.ravichandran@gmail.com | github.com/vinaya-ravi | linkedin.com/in/vv-r/ |
portfolio-vinaya.vercel.app/ | **2+ years of experience** | Austin, TX (Open to Relocation)

Education

Master of Science in Computer Science(Specialization: AI/ML) Aug. 2023 – May 2025
University of North Texas
Relevant Courses: Deep Learning, Machine Learning, Algorithms, Software Development for AI, Big Data and Data Science

Bachelor of Engineering in Information Science and Engineering Jun 2017 - Aug. 2021
SJB Institute of Technology, affiliated with Visvesvaraya Technological University
Relevant Courses: Operating Systems, Data Structures, DBMS, Computer Networks, Object Oriented Concepts

Technical Skills

- **Languages:** Python, C++, C#, JavaScript, TypeScript, HTML5, CSS3
- **Frameworks & Libraries:** .NET Core, ASP.NET, FastAPI, Angular, React.js, Node.js, Tailwind CSS
- **ML/DL:** TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, NLTK, spaCy, LangChain, LlamaIndex
- **Cloud & DevOps:** Microsoft Azure, AWS, Docker, Kubernetes, GitHub Actions
- **Databases:** SQL Server, MySQL, PostgreSQL

Professional Experience

Software Engineer Intern Mar. 2025 – May. 2025
MaygID LLC
Technologies: Python, FastAPI, Microsoft Entra ID, Databricks, PySpark, LangChain, Chainlit, MLflow, Docker

- Fine tuned AI agent with **Python** and **FastAPI**, optimizing identity workflows through Just-in-Time access patterns.
- Crafted agent evaluation dashboards using **LangChain** and **Chainlit**, containerized with **Docker** for rapid deployment.
- Connected **Microsoft Entra ID** to a custom IAM engine to enforce secure and scalable agent orchestration.
- Designed prompt tuning experiments in **PySpark** and **Databricks** and tracked results via **MLflow**.

Graduate Research and Teaching Assistant Jan. 2024 – Jul. 2024
University of North Texas - Toulouse Graduate School
Technologies: PyTorch, Ollama, LangChain, NVIDIA H100, LlamaIndex, Chainlit

- Guided students in applying statistical modeling and predictive analytics within **DTSC 4050** and **INFO 5505** courses.
- Engineered a Retrieval Augmented Generation (**RAG**) system using **LLaMA-2** and **Ollama**, integrating LLM capabilities.
- Optimized training with Distributed Computing on **NVIDIA H100 GPUs** using **PyTorch**, achieving 40% faster speeds.
- Integrated tools with **LlamaIndex** and **LangChain**, **Gradio** and **Chainlit** for seamless API and orchestration.

Associate Software Developer Jan. 2023 – Jul. 2023
Textron
Technologies: Python, FastAPI, AWS Lambda, EC2, S3, GitHub Actions, Docker, React

- Designed a prompt driven chatbot backend using **Python**, **FastAPI** and **AWS Lambda**, orchestrating workflows in **S3**.
- Engineered data pipelines on **AWS EC2**, containerized with **Docker** and visualized agent logs via dashboards in **React**.
- Automated CI/CD processes through **GitHub Actions**, improving deployment efficiency and reducing errors.
- Developed a lightweight intent classification model using **scikit-learn** to improve chatbot query resolution by 30%.

Software Engineer Oct. 2021 – Dec. 2022
Larsen and Toubro Infotech Mindtree
Technologies: .NET Core, C#, Databricks, PySpark, Azure, SQL, Angular, Node.js

- Constructed frameworks in **.NET Core** (**C#**) and **Node.js** to evaluate memory drift, caching and recall in agents.
- Scaled fine tuning pipelines using **PySpark** and orchestrated training with **Databricks** for multi agent prompt evaluations.
- Modernized legacy applications by transitioning to architecture with **Angular** and **.NET Core**, boosting efficiency by 40%.
- Refined model training datasets by transformation workflows in **Azure Data Factory** and **SQL** joins.

Machine Learning Intern Jan. 2021 – May. 2021
Knowledge Solutions India
Technologies: Pandas, NLP, Scikit-learn, spaCy, NLTK

- Built text classification pipelines using **spaCy** and **NLTK** for topic extraction from unstructured corpora.
- Increased NLP model accuracy by 15% via vector normalization, TF-IDF scaling and dimensionality reduction.

Academic Projects

LiverTumorSeg | U-Net, ResUNet, CT Imaging
- Implemented **ResUNet** for liver tumor segmentation on CT images, achieving high accuracy (Dice 0.96, IoU 0.93).

AlzheimerCNN | React.js, TensorFlow
- Developed **CNN** for brain MRI classification; optimized performance with augmentation and custom loss tuning.

DehazeNet | PyTorch, Deep Learning, Image Processing
- Trained generator networks to restore hazy images with real-time inference deployment pipeline.

TeamBinary – Personality Prediction | PyTorch, NLP, ML Evaluation
- Built an evaluation pipeline to predict MBTI traits from text using **KNN**, **Logistic Regression**, and **XGBoost**.

Optimizing Big Data Processing | PySpark, Random Forest
- Scaled ML workflows with **PySpark** multiprocessing and optimized **Random Forest** tuning using **GridSearchCV**.

Publications

- **Deep Learning Driven Early Detection of Alzheimer's Disease Using CNN**, presented at the 5th International Conference on Pervasive Computing and Social Networking (ICPCSN 2025) May 2025