VAMSI UDAYAKUMAR JONNAKUTI

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EDUCATION

New York University, Tandon School of Engineering — **NY, USA**
Master of Science in Computer Engineering — *Expected May 2026*

PES University — **Bangalore, India**
Bachelor of Technology in Computer Science and Engineering — *Aug 2015 – May 2019*

PUBLICATIONS

Vamsi Udayakumar J, S.Roy, P.B.Honnavalli, **"Correlative Analysis of Combined Machine Learning Classifiers on Anomaly-based Intrusion Detection Systems"**, 2021 IEEE Conference (TEMSMET)

EXPERIENCE

Target Corporation — **Bangalore, India**
Senior Engineer — *Aug 2022 – Aug 2024*

- Pioneered the transition of a low code automation platform to a unified no-code one, designing the **Postgres** database and **Java/Spring** microservices, empowering over **500 users** and saving **65,000 man-hours/year**.
- Spearheaded end-to-end creative automation capabilities using **OCR** & **ML** to extract design components along with relative positions to render package designs on Illustrator using **Java** & **ActiveX**, with **80% workload reduction**.
- Built a color extraction pipeline that processed artwork files using ML and then automated updates to **SPARK via Kafka-based services**, eliminating **100+ hours/year** of manual work at a rate that is **70% faster**.
- Led the migration from **Nomad to TAP** by revamping CI/CD pipelines, developing a web driver framework, and credential management API, improving system stability and reducing downtime by **40%**.
- Trained and mentored 6 TMs in **Java, Spring Boot, Vela, Docker**, and guided 2 automation projects to strengthen the understanding of the tech stack and agile SDLC.

Engineer — *Dec 2019 - Aug 2022*

- Developed five robust, scalable bots using **Selenium and Java**, automating key business processes that saved over **$500,000** annually while reducing manual effort by **2,000 hours** across two distinct business units.
- Revamped the manual intervention capability on the monitoring dashboard using **ReactJS and Redux**, helping users update data and change the processing state in real-time, reducing failure scenarios by **75%**.
- Built a record and play chrome extension that captures user interactions on websites during manual process execution and automatically generates automation scripts, reducing web-based automation development time by **95%**.

PROJECTS

AGNews LoRA Fine-Tuning | *Python, HuggingFace Transformers, PEFT, LoRA, PyTorch* — **Github Link**

- Fine-tuned a **BERT-based** model on AGNews using **LoRA** and **HuggingFace PEFT**, achieving **92.25% accuracy** with reduced trainable parameters and faster convergence.

Medical Chatbot MLOps | *Docker, Kubernetes, GitHub Actions, ArgoCD, FastAPI, MLFlow* — **Github Link**

- Developed an MLOps pipeline with **Argo Workflows/CD** for auto-retraining and CI/CD of a transformer-based medical chatbot deployed on a **Kubernetes cluster** provisioned via **Terraform** and **Ansible**.

Intelligent Intrusion Detection System | *NumPy, PyTorch, Keras, Python, Tensorflow* — **Github link**

- Engineered a 2 stage IDS using a **CNN-LSTM** trained anomaly IDS and **DT** based signature IDS, combined to work as a two-staged filtration system to detect malicious network packets with a **MCC score of 0.84**.

License Plate Recognition System | *OpenCV, PIL, Python, Tesseract* — **Github link**

- Revamped the LPR system by implementing a hybrid architecture that localized on non-compliant license plates, using **edge detection**, combined with **OCR** to achieve **92% accuracy** in extraction at a 2x faster rate.

TECHNICAL SKILLS

- **Languages:** Python, Java, C/C++, JavaScript, TypeScript, SQL, HTML/CSS, Bash
- **Frameworks & Libraries:** Angular, React, Selenium, Maven, Spring Boot, Flask, FastAPI, REST APIs, PyTorch, Scikit-learn, HuggingFace, LoRA, PEFT, MLflow, Ray, Pandas, NumPy, OpenCV
- **Tools & Technologies:** Docker, Kubernetes, Terraform, Jenkins, Git, Linux, ArgoCD, Ansible, PostgreSQL, MongoDB, MySQL, Kafka, Prometheus, Grafana