GAUTAM VR

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Digital Portfolio : [gautamvr.github.io]

WORK EXPERIENCE

AIrlitz | Intern, Engineering Team – *New York, US*　　　　　　　　　　　　　　　　　*Sept 2024 – Dec 2024*
- Implemented the end-to-end image ingestion workflow with AI object detection by fine-tuning CLIP with 77% accuracy using AWS step functions.
- Performed detailed analysis of cost vs. performance for AWS services, which improved the pipeline speed by 300% and cut down costs by 80%.

Intuit | Software Engineer-2 – *Bangalore, India*　　　　　　　　　　　　　　　　　*Oct 2022 – Sept 2024*
- Worked in core development of ProSeries TY22 & TY23, Professional Tax software products for US, which has revenue over 170 million USD.
- Implemented server-less pipeline with AWS services & released 11+ versions to 50k+ customers in US and performed data analysis in Splunk.
- Extensively researched & **filed patent** for the integration of GenAI platform reducing 60% of tax preparers' time, using LangChain & RAG pipeline.

Philips Healthcare | Software Engineer-2 – *Bangalore, India*　　　　　　　　　　　*Sept 2021 – Oct 2022*
- Supervised the development of clinical ML pipeline, by analysing various models & large clinical data ingested through Clinical Data Lake (CDAL).
- Owned and delivered 8+ features for MR major release & Service pack release with end-to-end documentation of design, tests & requirements.
- Led the end-end development cycle of 3 major features working from high level system design to class level development & code reviews.

Philips Healthcare | Software Engineer-1 – *Bangalore, India*　　　　　　　　　　　*Jan 2019 – Sept 2021*
- Implemented 6 features while adhering to SOLID principles in C# .NET using BDD (SpecFlow) and ensuring code quality score (TICS) > 95%.
- Developed 4 major components of MRI console system with maintainable and testable code using appropriate design patterns.

Nokia Solutions and Networks | Data Analytics Intern – *Chennai, India*　　　　　　*May 2018 – June 2018*
- Worked for product engineering with data analytics & Machine learning and reduced 72% of the defective modules in production line.

EDUCATION

Columbia University | MS in EE – Specialization in ML/AI - *New York, NY*　　[GPA: 3.93/4.00]　　*Exp. Grad: May 2025*
- **Course work:** *Applied ML, GenAI & Modern Deep Learning, Cloud Computing, Big-Data Analytics, [Applied Deep learning, Deep learning on EDGE, Applied ML on Cloud]*
- Active **Research Assistantship** in the field of *RAG & VectorDb* and **Lead Teaching Assistant** for the courses - *"ML for computer networks" & "NextGen Cloud Computing"*

Vellore Institute of Technology University | BTech in ECE – *Chennai, India*　　　　*June 2015 – May 2019*
- **Robotics Club**: Engineered robots coordinating across interdisciplinary teams using ML, Microcontrollers for *International Robotics Competition, ABU ROBOCON.*

PUBLICATION |IEEE Paper|　　　　　　　　　　　　　　　　　　　　　　　　　　*Published: May 2020*

IEEE citation - S. Kowshik, V. R. Gautam and K. Suganthi, "Assistance For Visually Impaired Using Finger-Tip Text Reader Using Machine Learning" 2019 11th International Conference on Advanced Computing (ICoAC), 2019.
- Text segmentation **(Fully Convolutional Network + NMS)** -> Text recognition **(Tesseract OCR)** -> **Text to Speech Conversion**

KEY PROJECTS |GitHub|

- **SpaceX Landing Analysis –** An end-to-end Data science project in IBM Cloud with Data collection and ETL using BeautifulSoup, EDA with SQL & plotly, Interactive visual analysis using Dash & Folium, and Predictive analysis using ML models with GridSearchCV to find the optimal hyper-parameters.
- **SkimLit –** An AI model which skims a research paper & provides a detailed summary. Used NLP with analysis of RNN (GRU, LSTM) & Conv1D models.
- **FoodVision -** Computer Vision model to identify the food using CNN (EfficientNetB0), trained with dataset of 10100 images by fine tuning the model.
- **Tumour Segmentation –** Medical image segmentation using PyTorch, OpenCV to identify tumour anomalies in medical images with Computer Vison.
- **AWS Web Application –** A multi-tier cloud-based web application with JWT authenticated REST API endpoints using node.js, hosted on EC2 in a custom VPC under ALB with autoscaling, along with RDS, S3, SES, Lambda & SNS. The whole stack is created using CloudFormation (IaC) for reusability.
- **Serverless Music App –** An AWS serverless app to stream music created using AWS CDK in python with API Gateway, Kinesis Streams, S3 & Lambda.
- **Document Analyzer –** An AI pipeline with GCP, AutoML models to extract the key data from documents and to store in BigQuery for further analysis.
- **Chatbot for Healthcare**– Interactive chatbot using C# with MS SQL database and WCF, integrated with CI pipeline – quality gates, build and run tests.
- **GamezOn –** A co-op game matching web app, built with 7 microservices on AWS using EC2, ECS, S3, etc along with content-based recommender system.
- **Physical Activity Prediction –** Thorough ML experimentation from EDA to prediction with ensembles of ML techniques – Random Forest, XG-Boost, etc.

PROFESSIONAL CERTIFICATIONS |Digital Badges|

- **AWS Certified Developer – Associate Certification** by AWS　*[April 2022]*
- **TensorFlow Developer Certification** by TensorFlow　*[Feb 2022]*
- **IBM Data Science Professional Certificate (V2)** by IBM　*[Nov 2021]*
- **Specialization in Deep learning** by deeplearning.ai *(+ honours)*　*[2018]*
- **Machine Learning** by NPTEL, IIT Kharagpur *(elite certification)*　*[2017]*

TECHNICAL SKILLS

- **Languages**　Python, C#, Java, C++, SQL, JavaScript
- **Frameworks**　PyTorch, TensorFlow, PySpark, OpenCV, WPF, .NET, node.js, Keras, pandas, scikit learn, D3, SpringBoot, WCF
- **Databases**　MSSQL, VectorDB, MongoDB, Dynamo DB, RDS
- **Platforms**　AWS, GCP, Azure, Linux, Windows

ACHIEVEMENTS

- **Winner** of 2021 IAP Hackathon, Philips – "Smart MRI console"
  - *Anomaly detection and segmentation* using deep learning**.**
- **Winner** of 24-Hour IoT Make-athon, 2018 with the theme:
  - Inventory management using **IoT, Deep learning and OpenCV**.
- Received **Super Star award & 3 quarterly awards** – (Philips and Intuit)
  - *Taking ownership, being Team player,* delivering *first time right.*
- Represented VIT university in *International Robotics Competition.*

LEADERSHIP AND CO-CURRICULAR EXPERIENCE

- Teaching Assistant for *Cloud Computing* and *ML in Networks*　**[2024-25]**
- Core leader in ***Young Leaders Club***, Philips – Reverse mentoring.　**[2022]**
- ***Department Head*** in Technocrats Robotics team, VIT.　**[2017-18]**
- ***Overall Student Organizer*** of International Conference, ICNETS[2]　**[2017]**
- Part of the Student Chapter in **IEEE Signal Processing Society.** **[2018-19]**
- Active member in **Toastmasters** club, for speaking and leadership skills.