Jessenth Ebenezer S.

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jessenth

PROFESSIONAL EXPERIENCE

TVS Motor Company Ltd. Aug 2023 – present
Data Scientist I Bangalore, India

- Part of the Connected Mobility team in the Digital & AI function
- Specializing in Connected Vehicles, Data Pipelines, AI Driven Analytics and Cross Functional Development
- Tech Stack: Python, Databricks, Jupyter, Pandas, Polars, Scikit Learn, Clickhouse, Kafka, Postgres, Azure, Grafana, Excel, Node, MySQL, Javascript
- Performed feature engineering for Low Range RCA in EV 2W based on aggregated trip data, driver patterns, external factors, etc. and helped achieve 95% efficiency in predictions with XGBoost based model deployment
- Built end to end distributed data pipelines for four EV 2 Wheeler vehicle variants, supporting realtime data ingestion and processing for over 7000 vehicles 24x7
- Developed an inference engine for Positive Reinforcement of Customer Riding behavior and Driver Scoring based on Speeding, Acceleration and Braking Indices
- Created a Polars based Binary Parser and Processing Pipeline for New Market Connected Vehicles in African and European Markets, reducing CPU and Memory overhead by 40% and reducing costs by 5x

EDUCATION

VIT University, Chennai Jun 2019 – Jun 2023
B. Tech Computer Science and Engineering Chennai, India

- Cumulative GPA of 8.59 on a scale of 10
- Research areas in focus: Virtual Reality, Machine Learning in Healthcare
- Presented a paper on VR in Higher Education at the *World Engineering Education Forum - 2019*
- Volunteered in *ViTeach*, a social outreach organization that helps educate underprivileged children from 2020-23
- Served as a member of the *Event Managers Club* in Winter 2022-23
- Contributed to the *2020 Vibrance Culture & Sports Festival* as an Organizing Committee member.

Velammal Vidhyashram, Surapet Jun 2017 – May 2019
AISSCE (High School Diploma) Chennai, India

- 87.4% Aggregate in 12th Grade
- 10 CGPA in 10th Grade
- Subjects: Math, Physics, Chemistry, Computer Science and English
- Extracurriculars: Music (Rap, Keys and Production), Game Development, Filmmaking, Drama, Journalism (School Newsletter)
- Achievements: Lead a team of 5 in 5 Game Jams, winning 2 (Design Championship by NASSCOM and Mindbox/Techbrahma Symposium) and ending as finalists in all 5, Jury's Choice Award and winner for writing and directing short films "Digital Zombies" and "Passion", 2x National Ranker in CV Raman Young Genius Awards, Several District and State ranks in SOF Olympiads

PROJECTS

Volumetric Rendering of Segmented MRI in Virtual/Augmented Reality for Surgical Planning Applications Dec 2022 – Apr 2023

(Bachelors Thesis, Publication Pending)

- Developed an advanced medical visualization tool aimed at revolutionizing surgical planning, patient education, and future real-time telesurgery applications
- Implemented Direct Volume Rendering, Raymarching, and Maximum Intensity Projection (MIP) algorithms to offer detailed segmentation and rendering of MRI data.
- Incorporated surface rendering to assist in diagnosing external symptoms, such as liver cirrhosis, through DICOM to STL conversion using Invesalius.
- Created an alpha build using Unity XR Toolkit, enabling compatibility with modern VR headsets like Meta Quest 3, with potential integration in clinical settings.
- Focused on enhancing user interactivity and visualization accuracy in virtual and augmented reality environments
- Metrics:
  - Achieved consistent frame rates over 90 in Quest 2 during volume rendering demos
  - Successfully processed and rendered MRI datasets of up to 2 GB with optimized memory usage
  - Received positive feedback from med school students and doctors on accuracy of renditions

Intelligent Tumor Detection and Classification in Brain MRI Using Computer Vision Apr 2022 – May 2022

(5th Semester)

- Developed an automated system for accurately segmenting and classifying brain tumors in T1 FLAIR MRI scans, enhancing early diagnosis and treatment planning
- Achieved 92% segmentation accuracy and 88% classification accuracy, with an average processing time of 10 seconds per image when using the inference engine built with Gradio
- Tech Stack: Python, OpenCV, Scikit-Image, Scikit-Learn, NumPy, Pandas, Matplotlib, Gradio

Comparative Analysis of Supervised ML Classifiers in Breast Cancer Detection Dec 2019 – Feb 2020

(2nd Semester)

- Classification performed on extracted features from Fine Needle Aspirate Images of breast mass (Wisconsin Diagnostic Dataset - UCI ML Repository)
- Evaluated Logistic Regression, K-Nearest Neighbors and Support Vector Machine classifiers and achieved a peak of 96.5% accuracy
- Tech Stack: Python, Pandas, Sklearn, Matplotlib, Seaborn

PUBLICATIONS

Learning Analytics: Virtual Reality for Programming Courses in Higher Education Jan 2020

Elsevier - Procedia Computer Science - Cited by 41

- The project introduces a VR based game to enhance Python programming education for first-year students, moving beyond traditional classroom approaches.
- The game features timed challenges at varying difficulty levels, allowing instructors to evaluate student performance and identify slow learners and uses reinforcement learning techniques to gain insights

CERTIFICATES

- AZ900 - Microsoft Certified: Azure Fundamentals
- Cisco - Cybersecurity Essentials
- Google - Foundations of Project Management