Amit Maheshwar Varanasi

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Education

University of Illinois at Chicago | Master of Science in Computer Science | GPA - 4.0/4.0 *Aug 2024 – May 2026*
Coursework: Natural Language Processing,3D Computer Vision, Data Science, Block Chain

Vellore Institute Of Technology | Bachelor of Technology in Computer Science | GPA - 3.6/4.0 *Jul 2017 – May 2021*
Coursework: AI, Image Processing, Data Structures, Cloud Computing, Operating Systems, OOPS, DBMS

Experience

- **Software Development Engineer | React,python,C#,.NET,SQL** *Jun 2021 - Jul 2024*
  Bank Of America Hyderabad, India
  - Led Trade Suggestion platform development, automating trade validation workflows in **C#** and creating direct integration with booking systems
  - **Achieved $10M** annual savings, **20% reduction** in manual processing, and faster settlement cycles
  - Engineered a **Redux state management system** to track real-time stock fluctuations across **15+** components, reducing UI re-renders by **60%**
  - Built Python trading pipeline with parallel processing for **2M+** trades, reducing processing time by **10%** and eliminating system bottlenecks
  - Migrated tri-party trade application from **Perl to Python**, boosting processing performance by **50%** for major clients including **BNY, Citadel**
  - Enhanced trade suggestion system by rewriting core components in **.NET** and upgrading IBM MQ with **TLS 1.2**, achieving **25%** faster processing
  - **Developed real-time dashboard** using **Python and Streamlit** to visualize work item progress, reducing issue resolution time by 30%.
  - **Resolved** critical data synchronization flaw by optimizing stored procedures in **SQL Server and C**, eliminating **90%** of unintended user lockouts
  - Recognized with **1 Gold, 2 Silver, and 5 Bronze awards** for delivering strategic solutions on multiple high-impact projects.
- **Software Engineering Intern | React,React Native, Python** *Jan 2021 - Jun 2021 & May 2019 – July 2019*
  Reliance Jio Hyderabad, India
  - Developed data encryption module for Jio Pharmacy's **React app**, securing sensitive user data and achieving **100% HIPAA compliance**
  - Built responsive **UI feature in SCSS** for Jio Pharmacy, enabling seamless cross-device adaptation and **boosting user engagement by 30%**
  - Created **React-based dynamic form generator** using **JSON** configuration for flexible research data collection
  - Delivered **20% faster page loads** and streamlined user experience for Jio Research's Knowledge Base
  - Built **React Native and Python** mobile app delivering localized real-time ocean forecasts to fishermen
  - Achieved **40% reduction** in weather-related incidents through accurate marine weather predictions

Projects

- **Multi-Modal Analysis of TikTok Shorts on Antidepressants | PyTorch, Transformers, HuggingFace, GPT, Pandas, NumPy** [GitHub]
  - **Engineered multi-modal** AI pipeline with custom scraping tool and LLM classifier to extract and categorize TikTok content
  - Achieved **92%** accuracy in identifying personal antidepressant experiences from video analysis
  - Built **LLM multi-modal feature** extraction from videos, **generating 20 critical insights** for drug safety and user experience improvement
- **Real-time virtual try-on | Python, OpenCV, TensorFlow,Transformers, HuggingFace, GPT, Pandas, NumPy** [GitHub]
  - **Architected** real-time AR try-on system using **SegFormer-B2 semantic segmentation** and **MediaPipe frameworks**
  - Achieved **30+ FPS performance** with **sub-200ms latency** for clothing and hairstyle overlays
  - **Integrated** multi-model AI pipeline with **facial landmark detection (468-point mapping)** and **hair/clothing segmentation**
  - Delivered **95% accuracy** in body part identification across diverse user demographics
  - **Implemented** adaptive perspective correction using **transformation matrices** for realistic item scaling and positioning
  - Enabled real-time adjustment to user movement and body posture changes during AR try-on sessions
- **Facial Recognition Guidance System | Python, OpenCV, and TensorFlow** [GitHub]
  - **Engineered** high-performance **multi-camera surveillance system** processing **2+** simultaneous video feeds at 8-12 FPS
  - Achieved **89.4% recognition accuracy** with optimized **53% confidence threshold** for real-time face detection
  - **Implemented parallel video processing** using **Python threading** to reduce computational overhead by **40%**
  - Published findings in the International Journal for Research in Applied Science Engineering Technology (IJRASET), DOI: 10.22214/ijraset.2023.
- **Shopping Kart Application | React, Node.js, MongoDB and AWS** [GitHub]
  - **Architected** complete e-commerce platform using **Node.js/Express.js backend with MongoDB database**
  - Supported concurrent user sessions and real-time inventory management across **20+ products**
  - Implemented **secure authentication** system using **Passport.js** with session management and role-based access control
  - Reduced unauthorized access attempts by **95%** while maintaining seamless user experience
  - Developed responsive web application using **EJS templating and Bootstrap framework**
  - Achieved **98% mobile compatibility** and reduced page load times to under 2 seconds across all devices
- **3D Face Reconstruction Research Project | Python, OpenCV, TensorFlow,Transformers, HuggingFace, GPT, Pandas, NumPy** [GitHub]
  - **Benchmarked** weakly-supervised learning approaches requiring **zero ground-truth 3D labels** against fully-supervised methods
  - Demonstrated **95%+ accuracy** in unconstrained in-the-wild scenarios without manual annotation
  - **Assessed** multi-modal supervision techniques combining **photometric pixel-level matching** with **perceptual feature similarity**
  - Improved visual fidelity while avoiding local minima convergence issues in reconstruction tasks
  - **Validated** confidence-based aggregation schemes for **multi-image inputs** with learned confidence weighting
  - Enhanced reconstruction robustness across diverse viewpoints and lighting conditions through adaptive weighting

Skills

- **Programming Languages:** Python, Java, C, C++, C#, JavaScript, HTML, CSS
- **ML/DL & Vector Retrieval:** TensorFlow, PyTorch, Scikit-learn, Transformers, LangChain, FAISS, Word2Vec
- **Data Processing & Visualization:** NumPy, Pandas, Matplotlib, Seaborn, NLTK, SpaCy, OpenCV
- **AI/ML:** LLMs, CNN, RNN, LSTM, Autoencoder, TF-IDF, Sentiment Analysis, Aspect–Opinion Mining, Classification, Clustering
- **Data Science:** Data Mining, Text Mining, Topic Modeling (LDA, LSA), Preprocessing Pipelines
- **Tools & Platforms:** Git, MySQL, MongoDB, Android Studio, Streamlit, GitHub