

# Anuj Marisetty

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## SUMMARY

Dynamic and results-driven software developer with a robust foundation in computer science and proven expertise in crafting cutting-edge full-stack solutions, 3D visualization platforms, and machine learning applications. Skilled at transforming complex concepts into innovative, user-centric software, with a passion for bridging the gap between research and practical implementation. Experienced in contributing to high-impact projects across academia and industry, including NSF-funded initiatives and real-world AI integrations. I thrive in collaborative and fast-paced environments, embracing challenges with creativity and a commitment to delivering meaningful innovation.

## EDUCATION

### Virginia Tech

*Master's in computer science*

Blacksburg, VA

Jan 2023 – Dec 2024

### Sri Venkateswara University College of Engineering

*Bachelor's of Technology in Computer Science*

Tirupati, India

Jul 2017 – Jul 2021

## EXPERIENCE

### Software Developer

Mar 2024 – Present

*Advanced Research Computing Visionarium - Virginia Tech*

*Blacksburg, VA*

- Developed a React-based web application powered by **THREE.js** and **WebGL**, enabling interactive visualization of complex **X3D** models, making research data more accessible and interactive for multidisciplinary teams.
- Developed a 3D simulation platform as part of a National Science Foundation (**NSF**) project, simplifying how researchers and students understand wireless communication systems in both academic and industry settings.
- Contributed to the 3D Roanoke Project, using high-resolution **LiDAR** data and CityEngine-generated 3D city models to simulate flood propagation scenarios, providing insights for disaster preparedness and urban planning.
- Worked closely with researchers and faculty to design visualization tools tailored to specific research needs, empowering teams to adapt 3D and **VR** content for their unique challenges and goals.

### Software Engineer – Systems Engineer

Aug 2021 – Dec 2022

*Tata Consultancy Services*

*Bengaluru*

- Created OCR solutions to streamline data analysis for financial and insurance firms, increasing efficiency by **20%**.
- Engineered **Machine learning** models to process data from documents using **OpenCV**, **Pandas**, and **RegEx**, achieving a **92%** accuracy rate and also conducted unit and integration testing to validate accuracy and reliability.
- Processed and analyzed large volumes of text data, applying techniques like tokenization, named entity recognition (NER), and text normalization to structure critical fields such as policy numbers, claim amounts, and many more.
- Designed and optimized ETL pipelines to extract, transform, and load structured data into PostgreSQL, integrating REST APIs for seamless data transfer and persistence.
- Deployed and maintained OCR applications in a CI/CD environment, debugging backend issues and optimizing system reliability in production.

### Artificial Intelligence and Machine learning Intern

Jun 2019 – Jul 2019

*Entrench Electronics*

- Designed and implemented a conversational **AI chatbot** using Python and the **NLTK** library.
- Explored multiple datasets using data mining techniques to get insights and patterns for chatbot development.

## SKILLS

**Languages:** Python, C/C++, SQL, Java, JavaScript, HTML/CSS, Kotlin, R, Vue, React, Typescript, GO, three.js.

**Technical:** GIT, Docker, Xampp, Tableau, Observable, MongoDB, X3D, LLM, Azure, AWS, XML, Unix, Unity, CI/CD, UI/UX, AdobeXD, Figma, Postman, WebGL, Data Lake, PostgreSQL, NOSQL, MySQL, Oracle SQL, Tailwind, Blender.

**Libraries:** Pandas, NumPy, Matplotlib, OpenCV (Computer Vision), Keras, TensorFlow, Scikit-learn, RegEx

**Certifications:** Python 101 For Data Science, AWS Fundamentals: Going Cloud-Native, Exploratory Data Analysis, The Data Scientist's ToolBox, Step Into Robotic Process Automation.

## PROJECTS

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- Personal Expense Tracker** | *React + Vite, Material UI, PostgreSQL, Go* 2024
- Developed a full-stack personal expense tracker replicating key features of Splitwise, including managing shared expenses, payments, and a dashboard with bar and pie charts for visualizing expenses.
  - Designed an intuitive interface, implemented efficient data management, and ensured secure backend functionality to deliver a seamless user experience.
- Pdf Assistant** | *Python, LangChain, OpenAI API, HuggingFace, Gradio* 2024
- Utilized **LangChain** and **OpenAI API** to process and extract information from PDF documents, providing accurate answers to user queries.
  - Used **HuggingFace** Transformers for improved natural language understanding and response generation.
  - Integrated a **Gradio** interface to create an accessible platform for querying documents.
- Codehort** | *HTML, CSS, React JS, Java Spring Boot, Azure SQL, Firebase* 2024
- Developed a **fullstack** web-based platform using HTML, CSS, and React JS, enabling users to create, join, and manage coding groups with customizable challenges.
  - Implemented features for tracking progress with leaderboards and visualizations, making coding a more social and engaging activity.
  - Utilized Java Spring Boot for backend development, Azure SQL for database management, and Firebase for secure user authentication, ensuring a reliable and user-friendly platform.
- Cricket Data Visualization** | *D3.js* 2023
- Designed an interactive visualization tool using **D3.js** and **Tableau** to display cricket statistics, enhancing the understanding of player performances and partnerships.
  - Implemented data cleaning and preprocessing techniques, including handling missing values and normalizing data.
  - Performed advanced calculations such as deriving strike rates, economy rates, and player milestones to ensure accurate and insightful visualizations using ball-by-ball data from the Indian Premier League (IPL).
- Hand Tracking and Volume Control** | *Python, OpenCV, MediaPipe* 2021
- Developed a system using **Python**, **OpenCV**, and **MediaPipe** to track and recognize hand gestures in real-time by identifying 21 key coordinates from live video feeds.
  - Implemented a gesture recognition algorithm to map the distance between the thumb and index finger to system volume adjustments using the pycaw module, enabling intuitive and contactless volume control.
- Object Detection** | *Python, MobileNet SSD, OpenCV* 2021
- Built a real-time object detection system using Python and the MobileNet SSD model to identify and label objects in live video streams with high accuracy.
  - Programmed bounding box tracking using OpenCV to label and follow detected objects, ensuring continuous identification and localization as objects move within the frame.
- Online Parking Management System** | *HTML, CSS, JavaScript, PHP, Xampp* 2020
- Designed a web application using HTML, CSS, and JavaScript for pre-booking parking slots, providing users with a convenient way to reserve parking spaces online.
  - Implemented an interactive parking map that allows users to view availability and book spots in real-time, enhancing user experience and functionality.