MONISH KUMAR DHANASEKAR

Binghamton, NY | +1 (510) 283-8807 | mdhanasekar@binghamton.edu | LinkedIn | GitHub | Portfolio

PROFESSIONAL EXPERIENCE

Software Developer Intern | Entertainment Technologists Development Corp. | California, USA. **Sept 2024 - December 2024**

- Engineered an AI/ML model for receipt processing using **TensorFlow, Keras, Pandas, and OpenCV**, enhancing media workflows by improving image processing accuracy, video rendering efficiency, and content analysis precision.
- Implemented seamless integration between front-end interfaces and AI/ML models using **React, TailwindCSS and Vite.js**, streamlining input data collection workflows and reducing processing time by 40%.
- Optimised data storage by integrating **MongoDB**, improving retrieval and reducing storage redundancy for processed image data.
- Deployed models on **AWS** to ensure scalability and optimized performance across diverse media processing applications.

Software Engineer | Mistral Solutions Private Limited. | Bangalore, India. **March 2022 – May 2023**

- Developed and deployed software solutions for embedded systems and robotics, integrating **ROS2 Foxy with Python and C++** to support real-time communication between sensors and machine learning models.
- Enhanced and optimized perception algorithms for image classification and object detection using **TensorFlow** and **OpenCV**, resulting in a 50% improvement in **detection accuracy** and a 25% gain in **perception precision**, enabling more reliable autonomy.
- Collaborated with cross-functional hardware and firmware teams to optimize system architecture for autonomous robotics platforms, reducing data processing time by 60% and significantly boosting overall system response and efficiency in real-time environments.
- Created **internal tooling and dashboards** to visualize high-frequency sensor data and machine learning model outputs. These tools were crucial in identifying system bottlenecks, streamlining debugging processes, and enhancing performance diagnostics.
- Contributed to a full product lifecycle—from prototyping to deployment—for autonomous robotics and smart automation

Web Development Consultant | The Grafician | Chennai, India **March 2019 - Feb 2022**

- Redesigned and developed responsive, user-friendly websites for a diverse set of clients, focusing on clean UI/UX and performance optimization using **React.js**, **HTML5**, **CSS3**, and **JavaScript**.
- Translated Figma and Adobe XD designs into pixel-perfect pages aligned with brand guidelines.
- Optimized performance with lazy loading, code splitting, and minification. Integrated **RESTful APIs** and handled client-side routing using React Router for dynamic user interactions and smooth navigation.
- Ensured cross-browser compatibility and responsive layouts through extensive testing and use of frameworks like **TailwindCSS.**

PROJECT EXPERIENCE

Real Time Chat Application, Link **November 2024**

- Built a real-time group chat app with **Java(Spring Boot)**, **JS**, **HTML**, and **CSS**, using **WebSocket (STOMP)** for live messaging.
- Integrated **RabbitMQ** for scalable, persistent messaging and **Axios for REST API** calls, ensuring reliable delivery.
- Implemented group creation, joining, message broadcasting, user tracking, and WebSocket reconnection for fault tolerance.

ATS Resume Checker, Link **August 2024 - September 2024**

- Built an ATS Resume Checker with **Python and Flask**, designed to analyze resumes and match them to job descriptions.
- Utilized **Natural Language Processing (NLP) libraries** to extract and interpret critical details from resumes and job postings.
- Constructed an intuitive web interface for easy resume uploads and detailed feedback, highlighting expertise in **backend development, NLP, API's and AI integration.**

Air Mouse, Link **July 2024**

- Created an Air Mouse application using Python, harnessing **OpenCV** for video capture and image analysis, combined with Mediapipe for accurate hand tracking.
- Applied "**pynput**" to map hand gestures into mouse actions, achieving real-time cursor control and click detection.
- Showcased adeptness in computer vision and gesture tracking through seamless technology integration.

Horror Movie Data Analysis, Link **December 2023**

- Processed 32,540 horror movie records using **MongoDB Atlas** and **Python Flask**, uncovering key insights into audience trends.
- Designed **interactive visualizations** with clustered columns and pie charts, enabling data-driven decisions for film production.
- Identified optimal movie release months by analyzing budget, revenue, and profitability, improving financial forecasting accuracy.

SKILLS

Languages: Python, Java, SQL, C, C++, JavaScript, TypeScript, HTML, CSS.
Database and Storage: MongoDB, MySQL, PostgreSQL, S3, AWS, Redis, DynamoDB.
Frameworks and Libraries: Django, ReactJs, NodeJs, ExpressJs, VueJs, TailwindCSS, TensorFlow, PyTorch, OpenCV, NumPy, Pandas.
Tools: Docker, Hadoop, Spark, Git, GitHub, DBeaver, Postman, Tableau, Vercel, RabbitMQ, ROS2, NAV2.

EDUCATION

Binghamton University, State University of New York, Thomas J. Watson College of Engineering and Applied Science
Master of Science in Computer Science **August 2023 - Dec 2025**
Relevant Coursework: Machine Learning, Design Patterns, Database Systems, Analysis of Algorithms, Operating Systems, Web Programming, Distributed Systems, Systems Programming.

Anna University, Chennai, India **August 2018 - May 2022**
Bachelors of Engineering in Electrical and Electronics
Relevant Coursework: Python Programming Fundamentals, Object Oriented Programming, C Programming Fundamentals.