

Harshith Kasthuri

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EDUCATION

University of Georgia, School of Computing
Master of Science, Computer Science(GPA - 3.98)

Athens, GA
August 2023 – April 2025

Osmania University
Bachelor of Engineering, Computer Science and Engineering(GPA – 8.94)

Hyderabad, India
August 2019 – June 2023

RELEVANT EXPERIENCE

Cognition and Dexterity Laboratory, University of Georgia

Athens, GA

Graduate Research Assistant

June 2024 – Present

- Conducted clinical testing procedures, including Action Research Arm Testing (ARAT), for rehabilitation and motor function assessment, capturing high-quality videos for data collection.
- Applied advanced camera calibration and depth techniques with computer vision algorithms to achieve precise 3D hand and finger position estimations.
- Improved multi-camera fusion for accurate hand tracking across viewpoints in high-resolution, high-frame-rate videos, achieving a stereo calibration RMSE of 0.232.
- Performed comprehensive joint angle analysis to evaluate finger movements over time, incorporating parameters such as velocity, acceleration, torque, and other biomechanical factors.
- Developed and implemented AI-driven models to analyze fine motor skills and hand movement patterns, supporting stroke recovery and advancing rehabilitation strategies.

TECHNICAL SKILLS

Programming Languages: C, C++, Java, Python.

Web Development: HTML, CSS, Flask, Expressjs, React, Nodejs, RESTful APIs.

Microsoft Azure: Virtual Machines, App Services, Storage, Networking, Automation, Cost Management and Security.

Databases: MySQL, PostgreSQL, MongoDB.

Data Analytics: PyTorch, Scikit-learn, Pandas, Seaborn, Matplotlib.

Other Skills: Data Structures and Algorithms using Java, Object-Oriented Programming, Data Analysis.

PROJECT EXPERIENCE

Movie E-Booking System

April 2024

- Developed a comprehensive movie booking web application using PERN Stack (PostgreSQL, Express, Reactjs, Node.js), delivering secure login, booking, promotions and admin functionalities.
- Designed and implemented a relational database schema, optimizing performance and ensuring data integrity with PostgreSQL, utilizing UML class diagrams for clear visualization and structure.
- Implemented software design patterns, including MVC architecture and system patterns, to enhance codebase scalability and efficiency, mitigating issues such as high coupling and low cohesion.
- Led a 5 member team using agile methodology, ensuring timely deliverables through sprint meetings and scrum practices as a team leader.

Flashcard Study Tool

May 2024

- Developed a full-stack flashcard revision web application using React for Dynamic UI and React Router for smooth navigation. Integrated Axios for API communication with an Express backend.
- Implemented a MongoDB database with Mongoose for managing user authentication and flashcard CRUD operations, including marking cards as active or inactive to track learning progress.

House Prices Prediction of Regression and Neural Networks

November 2024

- Performed Exploratory Data Analysis(EDA) and data cleaning on a Seattle house price dataset containing 2,017 rows and five features to ensure high-quality input for predictive modeling.
- Assessed and applied Feature Transformation and scaling techniques to prepare data for model training, improving model performance and stability.
- Implemented and monitored various machine learning algorithms, including Linear Regression, Lasso, Ridge, Gradient Boosting, and XGBoost, for price prediction.
- Designed and trained a Neural Network model with two hidden layers (64, 32 neurons) for predicting house prices, achieving a high R2 accuracy of 0.9970 after training for 50 epochs.