Jatin Gaur

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Education

IIIT Naya Raipur — Raipur, Chhattisgarh
B.Tech. in Electronics and Communication Engineering | CGPA: 8.3 — *November 2022 – Present*

Coursework

Operating Systems | Artificial Intelligence | Data Structures | DBMS
Machine Learning | Ethical Hacking | OOPs | IOT

Experience

SAMSUNG - Intern | *Python, XML, Gazebo, Linux, Json, DSA* — August 2024 - Present

- Implemented quality assurance protocols during the conversion of 2D maps to Gazebo worlds, ensuring a 100% accuracy rate in environmental fidelity, which improved user satisfaction and simulation realism for training purposes.
- Enabled the generation of 20+ unique layouts, improving the scale and speed of simulations for robotics testing.
- Redesigned algorithm structures for Gazebo environments, enabling seamless integration with external data sources; the new framework now supports real-time updates from 15+ sensors and enhances overall system responsiveness.

Projects

JobQuest: Web Development, Generative AI | website github — July 2024

- Designed a web app tracking applications, generating skill tests based on job descriptions using AI, and improving applicant screening by 40%.
- Incorporated Google's HuggingFace **word2vec** model and cosine similarity to calculate resume scores with 85% accuracy
- Automated and Reduced recruiter's workload by 50% using the **Gemini API** to generate skill tests and screen applicants
- **Tech Stack**: Node.js, React, Python, RESTful APIs, MongoDB, HTML5, CSS3

Guitar Note Transcrber: Python, Machine Learning, Audio Processing | github — June 2024

- Engineered a **Random Forest-based** audio transcriber, achieving 93% accuracy in recognizing and transcribing guitar chords from over 1,000 samples
- Increased note transcription accuracy by 20% through optimized **onset detection** algorithms and feature extraction (MFCC, spectrogram).
- Developed and extracted critical features, including **MFCC and spectrogram** data, to train a machine learning model that achieved accurate guitar chord recognition within 0.5 seconds of audio input.

Load Balancer: C++, Socket Programming | github — December 2023

- Designed a load balancer in **C++** using tcp socket programming, which can handle **50k+** connections per second, with distributed resource allocation across threads, enhancing system responsiveness.
- Leveraged thread library for **multi-threading** and **epoll** for event driven architecture in the system. Multi-threading integration reduced latency by **4x** (no of cores).
- Implemented Epoll (for Linux) and reduced CPU usage by **50%**. Enhanced system stability under high traffic loads, ensuring consistent performance.

Achievements

Hack-O-Harbour:Achieved 1st place overall out of 40+ competing teams in the Hack-O-Harbour AIML Track

Codeforces: 1489 Specialist

Technical Skills

Languages: C, C++, JavaScript, Python.
Frameworks: ReactJS, ExpressJS, NextJS, HTML, CSS, Node.js
Tools: GNU/Linux, Git, Docker, AWS, MongoDB POSIX threads, Google API, SQLSocket Programming.