

Chetan Chhetri

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About me

Meticulous and results-driven Computer Engineering graduate with a strong foundation in hardware design, programming (Python, Java, C++), and electrical systems. Skilled in software development, debugging, and CAD tools for simulation and circuit design. Experienced in VLSI design and verification at VLSI First, with a track record of successful team-based project completions. Adaptable, innovative, and eager to contribute technical expertise to deliver impactful engineering solutions.

Projects

- **Motion Detector – Agentic AI System** : - Bongard-HOI Reasoning & Visual Scene Interpretation using LLMs: Developed an AI system leveraging the Bongard-HOI model to detect human-object interactions in videos and images. Integrated DeepSeek R1 for reasoning and utilized LangChain agents to automate task workflows, ensuring efficient and accurate analysis. *Tech Stack*: LangChain, RAG, FastAPI, ChromaDB, PyTorch, HuggingFaceTransformers, OpenAI.
- **Personal Attorney – Legal RAG Assistant** : LLM-based RAG System for Personalized Legal Guidance: Built a legal assistant powered by Retrieval-Augmented Generation (RAG) to provide user-specific answers based on local laws. Vectorized user data and regulations using ChromaDB and served results efficiently through FastAPI and DeepSeek 8B on AWS. *Tech Stack*: LangChain, FastAPI, REST API, ChromaDB, DeepSeek, AWS.
- **SmartMed AI – Pill Detection App** : YOLO-based Real-Time Medicine Classification Tool: Developed a pill counting application for pharmacies leveraging YOLO for real-time video stream detection. Trained the model on the Kaggle pill dataset and deployed the solution on AWS EC2/S3, with initial prototyping done in Google Colab. *Tech Stack*: YOLO, OpenCV, Python, FastAPI, Google Colab, AWS.

Education

MSCs University of Bridgeport

2024 – Present

- Coursework: Machine Learning & Deep Learning: TensorFlow, Pandas, YOLO, LangChain Web Development: Flask, FastAPI Data Handling & Processing: Pandas, SQLAlchemy LLM Applications: LangChain, OpenAI API

BTech JNTUH

2017-2021

- Digital Logic Design, VLSI Systems, Microprocessors, VHDL Programming, Embedded Systems, Computer Architecture

Experience

University of Bridgeport, E-Commerce and Digital Operations Associate

Bridgeport, CT

- Managed bookstore inventory and order placements using digital cataloging systems
- Utilized SQL-based tools and spreadsheets to track stock levels and process customer requests efficiently.
- Streamlined order workflows by creating structured logs, improving accuracy and reducing errors.
- **Tech stack**: College inventory management software, USPS tracking systems, SQL databases, and spreadsheet tools.

VLSI First, RTL Design Engineer

Hyderabad, India

2022–2023

- Designed and implemented digital systems using combinational and sequential circuits in VHDL, focusing on performance, reliability, and scalability.

- Verified designs using UVM test benches, constraints, and functional coverage analysis to ensure correctness and robustness.
- Collaborated with cross-functional teams to integrate modules and optimize the verification process.
- **Tech stack:** Questasim, Xilinx, VHDL, UVM.

Technologies

Languages: Python, Java, C/C++, VHDL

Frameworks & Libraries : TensorFlow, Flask, FastAPI, LangChain, YOLO

Database & Cloud Deployment : SQL databases (MySQL, PostgreSQL), ChromaDB, AWS (EC2, S3, SageMaker), REST APIs

AI / LLMs & RAG Systems: OpenAI API, DeepSeek, Retrieval-Augmented Generation (RAG) systems, HuggingFace Transformers

Tools & Platforms: Google Colab, College inventory management software, USPS tracking systems, OpenCV, Questasim, Xilinx

Strenghts

Problem Solving, Object-Oriented Programming, Design Patterns, LeetCode Enthusiast, Model Deployment, Cloud Platforms, Clean Code, Visualization, Collaboration, Attention to Detail

Certifications

Udemy: Game Developing with Spring Boot for Game API : Provided APIs for game clients to interact with, such as player profiles, leaderboards, and achievements.

The Complete Networking Fundamentals with CCNA: Covered OSI model, IP addressing, routing, switching, subnetting, and CCNA certification preparation.

VSD - Physical Design Flow: Covered timing closure, floorplanning, placement, routing, and hands-on transition from RTL to GDSII.