

Vibhrav Jha

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EDUCATION

University of Wisconsin-Madison

B.S. Computer Science, Data Science, and Economics

Madison, WI

Sep 2023 – Expected May 2027

- **GPA:** 3.718 / 4.0 (Dean's List)
- **Relevant Coursework:** Big Data Systems, Artificial Intelligence, Machine Learning for Research, Advanced Java, Distributed Systems, Advanced Python, Statistics, Econometrics

SKILLS

Languages: Python, Java, TypeScript, JavaScript, SQL

Databases: MySQL, SQLite, Apache Cassandra, MongoDB, Snowflake

Frontend & Backend: React, Next.js, HTML/CSS, FastAPI, Express.js, Node.js

Distributed Systems & Tools: Apache Kafka, Apache Spark, HDFS, gRPC, Docker, Git

AI & ML: PyTorch, Scikit-learn, Pandas, IBM Docling, Ollama

EXPERIENCE

UW–Madison People & Robots Lab

Undergraduate Research Assistant

Madison, WI

Jan 2026 – Present

- Architecting a **Chrome extension** to deliver real time, context aware security guidance for adults with Intellectual and Developmental Disabilities (IDD) as part of an HCI research study.
- Building a vision language pipeline integrating **multimodal vision-OCR inference** and DOM analysis, converting browser security events into plain language explanations with concrete, branching decision prompts for users with abstract reasoning challenges.
- Building a privacy preserving **ephemeral access control** system enabling caregiver collaboration while preserving user's agency, informed by IRB research protocols and accessibility design principles.

VDart Inc.

Software Engineering Intern

Atlanta, GA

May 2025 – Aug 2025

- Led development of an automated RFI/RFP generation pipeline using **IBM Docling and Gemini**, reducing proposal turnaround from **2 weeks to under 24 hours** and increasing team's proposal capacity by **3x**.
- Engineered a structured document ingestion pipeline processing **100+ technical RFPs** which preserves tables, headers, and figures via **IBM Docling** with semantic chunking; achieving **96% retrieval accuracy** validated against historical proposals.
- Designed and developed a full-stack chat interface with **React** frontend (token streaming, custom UI/UX, file upload) and **FastAPI** backend for model response parsing, serving **50+ users**.

Pink City Expressways

Software Development Intern

Delhi, India

Jan 2022 – Mar 2023

- Developed an equipment tracking system using data-driven analytics that **increased monthly revenue by \$18K** through improved machinery utilization.
- Optimized SQL database schema for the CRM platform, ensuring **data integrity** and managing **30+ business leads**, which increased partnership conversions by **27%**.
- Designed a responsive website using **HTML, CSS, and JavaScript** that reduced inquiry response times by **40%**.

PROJECTS

Real-Time Stock Streaming Engine | *Python, Apache Kafka, gRPC, Protobuf, HDFS*

Dec 2025

- Architected a fault-tolerant streaming pipeline using **Apache Kafka** and **Protobuf** serialization to process high frequency stock ticks, ensuring **exactly once semantics** via atomic checkpointing.
- Implemented **consumer groups** with automatic crash recovery and offset management, piping data into **HDFS** for analytical workloads while ensuring data integrity.

Distributed Weather System | *Python, Apache Cassandra, Docker, Apache Spark*

Nov 2025

- Designed a 3 node **Apache Cassandra** cluster implementing tunable consistency to prioritize write availability while maintaining read accuracy for sensor data ingestion.
- Engineered **automatic failover mechanisms** that degrade gracefully during node outages, ensuring **100% write availability** for sensor data ingestion even when 33% of the cluster is down.

Startup Scout | *TypeScript, React, Express.js, SQLite, Python, Firecrawl*

March 2025

- Built an investor-startup matching platform by **scraping 1,000+ company profiles** with intelligent filtering and a RESTful backend using **Express.js and SQLite**.
- Engineered a web scraping pipeline with Firecrawl and custom Python parser to extract, normalize, and structure 1,000+ startup profiles with deduplication and schema validation for investor filtering.