

KUSHAL BHATTARAI

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Education

University of Louisiana Monroe

Expected Graduation: May 2027

B.S. in Computer Science (Honors)

GPA: 3.94/4.0

Relevant Coursework: Data Structures and Algorithms, Databases (MySQL), Statistics, Calculus, Computer Information and Networking System, Discrete Mathematics, Operating System, Computer Ethics, Computer Architecture

Skills

Programming Languages: Python, Java, C, C++, JavaScript, TypeScript, SQL, HTML/CSS

Frameworks & Libraries: React, Next.js, Node.js, Express.js, Tailwind CSS, NumPy, Scikit-learn, OpenCV, MediaPipe

Tools & Platforms: Git, GitHub, Postman, Jupyter Notebook, IntelliJ IDEA, Docker, Figma, Excel, SPSS, Power BI

Databases & Cloud: MySQL, MongoDB, Redis, AWS (EC2, S3), Google Cloud, Firebase, Supabase

Networking & Security: Linux, WireShark, Firewall Configuration, Packet Analysis, Network Scanning

Professional Experience

Web Developer Intern | Key Marketing Solutions | Monroe, LA

Jan 2026 – May 2026

- Managed and supported a portfolio of 75+ client websites, performing content updates, layout enhancements, and performance optimizations to improve functionality and user experience.
- Developed and launched client websites aligned with business goals while executing updates across multiple sites and managing domains, hosting, and technical configurations to ensure 99.9% uptime and reliable operations.

Teaching Assistant | University of Louisiana Monroe

Aug 2025 – Dec 2025

- Supported programming instruction and labs for a class of 35 students, reinforcing Java concepts and coding skills.
- Reviewed and evaluated 50+ student projects, delivering actionable, personalized feedback and assisting with exam preparation to improve coding proficiency, critical thinking, and problem-solving abilities.

Projects

HoloHand | Python, OpenCV, MediaPipe, C#, WebSockets, JSON, NumPy

Nov 2025– Present

- Build a real-time sign language detection system using Python, OpenCV, and MediaPipe, capturing and interpreting 21 key hand landmarks to recognize basic signs and gestures through coordinate-based interpretation of joint position.
- Design a gesture-processing pipeline that converts hand shapes, finger positions, and palm orientation into classifiable sign patterns using coordinate-based analysis for communication and accessibility in modern applications.
- Improve system speed and stability with multithreading and headless execution, enabling smooth sign recognition at 30–60 FPS with low processing delay across diverse real-time operating conditions.

ACL Injury Prevention and Recovery System

Nov 2025

- Developed an AI-assisted movement-tracking pipeline using Python and wearable sensor integrations to capture joint trajectories, movement patterns and detect abnormal knee rotation patterns associated with elevated ACL injury risk.
- Built a full-stack application using React, Node.js, and MongoDB with real-time analytics, wearable integration, and secure user authentication to connect athletes, trainers, and clinicians in one ecosystem.

E-commerce Data Analysis | Python, MongoDB

Jan 2024 – Dec 2024

- Cleaned and analyzed over 10,000 e-commerce transaction records collected from various U.S. states using MongoDB.
- Built automated Python pipelines to extract and visualize data—producing trend charts, demand patterns, and customer behavior insights—reducing manual analysis time by 35% and significantly improving reporting efficiency.
- Identified top-performing states and products, improving decision-making clarity for business users by 20%.

RoboStack | Java

Nov 2023

- Integrated a real-time visualization interface for the simulated environment, significantly enhancing debugging capabilities and minimizing development time by approximately 20 hours weekly across multiple development stages.
- Implemented command-based operations to move the robot, improving retrieval efficiency by 35% during tasks.
- Designed an optimized stack representation using an $O(1)$ time-complexity algorithm to track and display system states, eliminating interface lag and improving overall performance during simulations.

Certifications

Google Cybersecurity Certification (Google) • Ethical Hacking Essential (EC Council) • Introduction to Cybersecurity (Cisco) • IT Customer Support (Cisco) • Getting Started with Cisco Packet Tracer (Cisco) • Networking Basics (Cisco)

• AWS Cloud Practitioner (AWS) • AWS AI Practitioner (AWS)