

# Adhik Adhikari

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## Summary

Computer Science junior at ULM (GPA 3.93) with hands-on experience building full-stack applications and leading teams. Proven ability to deliver software that solves real business problems, communicate across technical and non-technical teams, and take ownership from day one.

## EDUCATION

### University of Louisiana at Monroe

Bachelor of Science, Computer Science, Minor in Mathematics

Aug 2023 - May 2027

Monroe, LA

• **GPA:** 3.93/4.00

• **Achievements:** Honors, President's List

• **Coursework:** Data Structures & Algorithms, Web Development, Database Systems, Object-Oriented Design and Programming, Operating Systems, Computer Networks

## EXPERIENCE

### Epic Car

Jun 2025 - Aug 2025

#### Software Engineering Intern

Shreveport, LA

- Saved **15 hours** of weekly manual logging by building a full-stack inventory management system (**React, TypeScript, Node.js, Express.js, PostgreSQL, Docker**), translating warehouse manager requirements into a system that replaced manual spreadsheet tracking across factory operations.
- Handled **5,000+ active SKUs** daily via a **Node.js/Express REST API** backed by **PostgreSQL**, with audit logging that ensured accurate inventory records and eliminated manual data reconciliation.
- Cut deployment time by **30%** by establishing a **CI/CD pipeline** with **GitHub Actions** and **Docker** on **AWS** within an **Agile** development workflow, automating tests, and enabling daily releases aligned with sprint cycles.
- Secured inventory overrides and critical stock deletions by implementing **JWT-based authentication** and **Role-Based Access Control (RBAC)**, restricting high-risk actions to authorized shift managers only.
- Accelerated the receiving process by **40%** by integrating a mobile-responsive barcode scanning feature optimized for warehouse tablets, enabling staff to log incoming pallets on the floor in real time.

### Association for Computing Machinery (ACM) - ULM Chapter

Nov 2025 - Present

#### President

Monroe, LA

- Grew active club membership by **40%** by leading a team of 5 officers to restructure weekly meetings and expand technical programming.
- Rebuilt the club's legacy website to resolve ongoing deployment failures, developing a new responsive platform using **React, Next.js, and Tailwind CSS**, and hosting it reliably on Vercel to manage event schedules.
- Designed and led hands-on coding workshops for **25** students on Git workflows and debugging strategies, helping members complete course and club projects more independently.
- Grew annual university Hackathon attendance by **20%** by managing logistics, technical setup, and a **\$1,500 budget** across **50+** participants.

### University of Louisiana at Monroe

Aug 2024 - May 2025

#### Undergraduate Researcher – Emerging Scholars Program

Monroe, LA

- Built **Python** benchmarking scripts to profile runtime and power consumption of **AI inference** workloads across multiple model configurations on low-power edge hardware, identifying more energy-efficient deployment options for autonomous vehicle applications.
- Developed an image-processing evaluation pipeline using **OpenCV** and **NumPy** to assess **SLAM-based** mapping and navigation accuracy on multispectral drone imagery for smart-agriculture crop monitoring.
- Authored a technical research paper documenting experimental methodology and benchmark results across edge AI configurations; presented findings to a university faculty panel and was selected for inclusion in the department's annual research showcase.

## PROJECTS

### SafeRoute – Crime Risk Alert App | [GitHub](#)

Jan 2026

- Built a cross-platform mobile app in **React Native** delivering real-time, GPS-based crime risk alerts using a custom severity and time-decay scoring algorithm.
- Engineered a **Django REST API** to process user-submitted crime reports and generate dynamic color-coded map overlays, updating risk zones as report data aged.
- Integrated the **OpenAI API** to classify and summarize regional crime data into concise, context-aware natural-language safety alerts for end users.

### Drone Route Optimization System | [GitHub](#)

Sep 2025

- Built a **Java** route-optimization system for multi-drone delivery, combining clustering, branch-and-bound search, and route-splitting logic to generate feasible paths under battery and payload constraints.
- Built a branch-and-bound engine with MST-based lower-bound pruning (Prim's algorithm) and nearest-neighbor bootstrapping, achieving near-optimal solutions for problem sizes intractable by pure exact methods.
- Optimized geographic lookups to  $O(1)$  via a precomputed **Haversine Distance** Matrix, balanced fleet workload using least-loaded-first drone assignment, and validated correctness with **JUnit 5** unit tests.

### Visual Route Spark | [Website](#)

Feb 2025

- Built an interactive pathfinding visualizer in **React** and **TypeScript**, managing complex grid state to render real-time step-by-step algorithm animations.
- Implemented and optimized Dijkstra's and A\* graph algorithms, animating node traversal and shortest-path calculation across dynamically configurable grids.
- Designed a side-by-side comparison view for simultaneous benchmarking of competing algorithms, visualizing differences in execution speed and node exploration efficiency.

## TECHNICAL SKILLS

- **Languages:** TypeScript, JavaScript, Python, Java, SQL, HTML/CSS
- **Frontend:** React, React Native, Next.js, Tailwind CSS
- **Backend & Databases:** Node.js, Express.js, Django, PostgreSQL, RESTful APIs
- **DevOps & Tools:** Git, GitHub, Docker, AWS, GitHub Actions, Jest, Linux
- **Concepts & Practices:** Agile, JWT (Authentication), Role-Based Access Control (RBAC)