

# DINESH CHHANTYAL

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## EDUCATION

University of Louisiana at Monroe

Monroe, LA

Bachelor of Science in Computer Science, Minor in Mathematics, GPA: 4.0 / 4.0

Aug 2022 – May 2026 (Senior)

– Data Structures, Algorithms, Object-Oriented Programming, Database Management, Operating Systems, Computer Networks

## EXPERIENCE

Software Engineering Intern

Summer 2025

Simons Foundation

New York, NY

- Ran **MedGEMMA-4B** and **Segment Anything (SAM)** across **32×V100** and **8×A100 GPU nodes**, reducing single-slide inference time from **45min→2min** by batching and mixed-precision optimization.
- Wrote production **SLURM job-array wrappers** and **PyTorch+Triton kernels** to process **1.2TB of cryo-EM and whole-slide images**, logging metadata to **Ceph/S3** and tracking runs in **Weights & Biases**.
- Architecting **Chart Gizmo**, an open-source **Python data visualization library** leveraging Chart.js within the H5Gizmos framework, enabling researchers to programmatically generate interactive, browser-based visualizations for complex scientific datasets.
- Establishing comprehensive **technical documentation** and **developer guides** while implementing support for multiple visualization modalities (bar charts, line graphs, histograms) to enhance the scientific data presentation capabilities.

Full Stack Developer

Jan 2023 – Present

University of Louisiana - Monroe

Monroe, LA

- Integrated **Microsoft Teams API** with **Drupal CMS** via **OAuth 2.0** to automate real-time messaging, file sharing, and cross-platform calendar synchronization, reducing manual administrative tasks from **4 hours to 30 minutes weekly**.
- Engineered a **Python/MySQL ETL pipeline** to transform and migrate **10,000+ legacy records** into **Drupal 10**, implementing **data validation scripts** and **normalized schemas** to reduce redundancy, accelerate query speeds by **15%**, and cut storage costs by **10%**.
- Automated **end-to-end testing** for **50+ department webpages** using **Selenium** and **Cypress**, integrating tests into a **CI/CD pipeline (GitHub Actions)** to boost pre-deployment issue detection by **75%** and reduce post-launch user-reported errors by **30%**.

Software Developer

Oct 2022 – May 2023

Clamphook - EdTech Startup

Lalitpur, NP

- Developed a **Flask and React-based Computer-Based Testing (CBT) platform** with **Redis session caching** and **Nginx load balancing**, enabling **5,000+ concurrent users** and driving a **40% reduction in server latency** to support **5x enrollment growth**.
- Architected a **Docker-based microservices infrastructure** for **Flask backend APIs** and **React admin panels**, automating **CI/CD pipelines** with **GitHub Actions** to deploy a **React Native iOS app** that achieved **5,000+ downloads** and **99.9% uptime post-launch**.
- Designed a **real-time metrics dashboard** using **Chart.js** and **Flask-SocketIO**, integrated with **PostgreSQL query optimizations**, to increase student consistency by **8%** and content efficiency by **25%** through actionable data insights.

## PROJECTS

- **NoteMeet** — Developed an **AI-powered meeting platform** with a focus on **scalable architecture** and **distributed processing**. Implemented **AWS Lambda** functions for serverless processing of audio data and used **DynamoDB** with optimized access patterns for efficient data retrieval. Applied **algorithm optimizations** to the transcription pipeline, reducing processing time by **35%** while maintaining accuracy. — [Link](#)
- **RhymeAI** — Built a **multi-agent emcee platform** that **plans, scripts, and runs events end-to-end**, producing **schedules, slides, and multilingual voice-overs** and updating them in real time. Key features include **AI-generated emcee audio** and a **live dashboard** that tracks engagement and timing. Developed with **Gemini 2.5 Pro**, **ElevenLabs TTS**, and **TypeScript + Next.js**, it delivers seamless, engaging, data-driven events. — [Link](#)
- **OfferMart - Sustainable Marketplace** — Engineered a **three-sided marketplace platform** connecting retailers, consumers, and delivery services for near-expiry products. Built a **scalable backend** using **Node.js**, **AWS S3**, and **serverless functions** on Vercel to handle unpredictable traffic patterns. Implemented **AI-powered verification systems** using OpenAI DALL-E and Deepseek for automated product validation and dynamic pricing algorithms. — [Link](#)
- **Prime Number Theory Research** — Implemented and optimized the **Meissel-Lehmer algorithm** using **Python** and **NumPy**, solving complex computational challenges to achieve prime counting up to  $10^{18}$ . Applied **advanced algorithm optimization techniques** and **parallel processing** to improve performance. — [Link](#)

## TECHNICAL SKILLS

**Programming Languages:** Python, Java, SQL, JavaScript, TypeScript, C

**Databases & Cloud:** AWS (Lambda, S3, DynamoDB), MySQL, PostgreSQL, Snowflake, MongoDB, Database Design, Query Optimization

**Software Development:** Algorithms, Data Structures, OOP, RESTful APIs, Microservices, System Design, Version Control (Git)

**Data Analytics:** Tableau, Power BI, Data Visualization, ETL Pipelines, Data Quality Governance

**DevOps & Testing:** CI/CD (GitHub Actions), Docker, Unit Testing, Integration Testing, Test Automation

**Professional Skills:** Problem-solving, Technical Documentation, Code Reviews, Agile Methodologies, Team Collaboration

## ACTIVITIES & CLUB INVOLVEMENT

- **Google Developer Group on Campus ULM, President** Aug 2024 – Present
- **IEEE Shreveport Section, Webmaster** Jan 2025 – Present
- **ICPC NA South Division 2024, State Champion** Nov 2024
- **ULM Student Affairs, Student Council** Jan 2024 – Present