Adil R. Mallick

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EDUCATION

Michigan State University <div align="right">Lansing, MI</div>

B.S. in Computer Science, Minor in Business <div align="right">*Expected Graduation: May 2027*</div>

- Coursework: Data Structures & Algorithms, Modern C++ Programming, Discrete Mathematics, Multivariable Calculus, Computer Systems & Architecture, Linear Algebra & Matrix Computations.

EXPERIENCE

DTE Energy <div align="right">Detroit, MI</div>

Cloud and Infrastructure Intern <div align="right">*June 2025 – Present*</div>

- Designed and implemented a chatbot for **Microsoft Teams** using **Terraform**, integrating **APIs** (e.g., **ServiceNow**) to retrieve and present data for **500+ enterprise users**, and developed a **Terraform API Management module** used by multiple DTE Chatbots for streamlined access to API instances.
- Utilized **Microsoft Azure** to provision **resource groups** and deploy **APIs**, ensuring scalable and reliable **backend infrastructure** reducing load times by **27%**.
- Collaborated in **Agile** sprints to develop **backend systems** supporting **cloud** and **DevOps workflows** in a fast-paced enterprise environment.
- Integrated **Power Automate** front-end, increasing user efficiency by **50%**.

Alchemy Software <div align="right">Lansing, MI</div>

Software Engineer <div align="right">*Sep. 2024 – May 2025*</div>

- Collaborated with a cross-functional team to design and implement a comprehensive task management application using **React, Next.js,** and **Electron.js**, and developed Python automation scripts for email list management utilizing **smtplib** and **pandas** to streamline data processing by **33%**.
- Developed a serverless architecture on **Cloudflare**, integrating API gateway, CloudFormation, and CloudWatch to streamline backend processes, achieving a 33% reduction in loading times.
- Built a responsive site for *Half-Full Task Manager*, improving memory efficiency by **46%**.

Huda Clinic <div align="right">Detroit, MI</div>

Software Engineering Intern <div align="right">*May 2024 – Aug. 2024*</div>

- Refactored and streamlined patient onboarding processes by **40%** through the integration of **Athenahealth APIs**, enabling automated data intake and reducing manual entry across healthcare workflows.
- Designed and implemented a fully **responsive**, **mobile-first UI** using modern frameworks, significantly improving performance by **28%** and increasing accessibility across multiple platforms.

PROJECTS

ZenTube | *Next.js (App Router), React, Node.js, Tailwind CSS, YouTube Data API v3*

- Engineered dynamic routing system using **Next.js** file-based architecture and [**param**] folders, enabling SEO-optimized URLs across 3+ core pages and improving user navigation by **30%**.
- Designed 3 custom serverless **API endpoints** to efficiently proxy YouTube Data API calls, reducing frontend load time by **40%** through asynchronous data fetching.
- Developed a fully **responsive UI** with **Tailwind**, enhancing mobile performance and increasing accessibility score by **32%**.

Movie Recommender System | *Python, Scikit-learn, Pandas, NumPy, Streamlit*

- Built a **hybrid recommendation engine** combining collaborative filtering (NMF) and content-based filtering (TF-IDF + cosine similarity), achieving **23% higher accuracy** over baseline models.
- Implemented an **end-to-end ranking pipeline** (recall, first-stage, final scoring) with sparse matrix optimizations, reducing query latency by **35%** and enabling real-time recommendations via an interactive **Streamlit dashboard**.

TECHNICAL SKILLS

Programming Languages: Java, Python, JavaScript, HTML/CSS, C++, Terraform, SQL
Frameworks: Node.js, React.js, Flask, Arduino, TensorFlow, PyTorch, Scikit-learn, NEXT.js
Tools: Azure, IntelliJ IDEA, PyCharm, Eclipse, AWS, Git, Bootstrap, Visual Studio, NumPy, Pandas, VMWare
Certifications: CompTIA A+ Cyber Security, Cisco IT Essentials