# Minh Vu

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## Education

**Gettysburg College** Gettysburg, PA

*Bachelor of Science in Computer Science and Mathematics* *Dec 2026*

- **Courses:** Object Oriented Programming, Data Structures and Algorithms, Ethical Hacking, Computer Vision
- **Achievements: Bronze Medal** at PSU-Harrisburg site The **ICPC Mid-Atlantic Regional Contest 2024**

## Experience

**CMC Global** Hanoi, Vietnam

*Incoming Software Engineer Intern* *Nov 2025 – Jan 2026*

**Gettysburg College** Gettysburg, PA

*Full-stack Developer* *Jun 2025 – Jul 2025*

- Developed a full-stack event management web app for the department using **React.js**, **Tailwind**, **Express.js**, and **MySQL** to handle event scheduling, attendance, and resource allocation
- Managed **200+** student-event registrations using **MySQL** junction tables with **foreign key constraints** to prevent duplicates and ensure data integrity
- Improved by **80%** in event query response time by implementing **Redis** caching layer for frequently accessed event

*Techstacks: Express.js, Node.js, React.js, MySQL, Redis, Tailwind, Apache*

**VinAI** Hanoi, Vietnam

*Software Engineer Intern* *Jun 2024 – Aug 2024*

- Worked in the GuardPro team to enhance the reliability of camera product line with object recognition capabilities
- Accomplished a **2.1%** improvement in data sharing speed and maintained **99.8%** system uptime by building a two-way sync system for camera databases using a master-slave setup with **Zookeeper**
- Achieved **6%** acceleration in object recognition processing by optimizing **MongoDB** schemas for easier data access

*Techstacks: Express.js, Node.js, MongoDB, Apache Zookeeper, Couchbase*

**Gettysburg College** Remote

*Undergraduate Researcher Assistant* *May 2024 – Jul 2024*

- Co-authored **"Optimal Play of the All Yellow Zombie Dice Game"** published in Springer's book series
- Designed a human-playable strategy achieving **99%** alignment with optimal strategy by utilizing a **Java** simulation

## Projects

**Book Ordering Platform**

- Developed distributed platform using Spring Boot microservices for order placement, payment, and delivery workflows
- Orchestrated book order transactions across services with **Apache Kafka** and the **SAGA** pattern, enabling consistent updates to order, payment, and delivery status with retry and rollback mechanisms
- Maintained integrity of order and payment records using the **Outbox** pattern and **Debezium** on **PostgreSQL**, while applying **CQRS** to support scalable, low-latency queries for reporting and operations

*Techstacks: Java, Spring Boot, Apache Kafka, Docker, PostgreSQL, Kubernetes, HTML, Bootstrap*

**Marketing Mail Delivery System**

- Built a distributed, multi-microservice chat application in Go, featuring an email-style interface that supports sending the marketing message to multiple recipients for large-scale marketing campaigns
- Developed Auth service with **PostgreSQL** and integrated **OAuth2.0** to provide secure and seamless user sign-in
- Integrated **RabbitMQ** to orchestrate async message, auth and log requests, ensuring efficient backend flows
- Containerized and deployed services with **Docker** to enable independent scalability.

*Techstacks: Go, Docker, Kubernetes, gRPC, Postgres, MongoDB, RabbitMQ, HTML, CSS*

**Song Searcher System**

- Developed distributed system in **Java** with TF-IDF algorithm that enables users to query lyrics for matching songs
- Integrated **Apache Zookeeper** to monitor leader and worker nodes to enable auto failure detection and recovery
- Benchmarked performance with **Prometheus** and **Grafana** to achieve query latency of **0.8s** for real-time search

*Techstacks: Java, Apache Zookeeper, gRPC, Prometheus, Grafana, HTML, Bootstrap*

## Technical Skills

**Languages**: Java, Python, JavaScript, Typescript, SQL, Go, C++
**Frameworks**: React.js, Node.js, MongoDB, PostgreSQL, RabbitMQ, Docker, Kubernetes, Kafka, Zookeeper, Redis