Minh Vu

Gettysburg, Pennsylvania | minhvud3008@gmail.com | linkedin.com/in/minhvu | github.com/minhvdq | damianovu.com/

Education

Gettysburg College Gettysburg, PA

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

- **Courses:** Data Structures and Algorithms, The Theory of Computation, Database Systems, Operating Systems
- **Achievements: Bronze Medal** at PSU-Harrisburg site The **ICPC Mid-Atlantic Regional Contest 2024**

Experience

VinAI Hanoi, Vietnam

Software Engineer Intern *Jun 2024 – Aug 2024*

- Developed **computer vision models** for GuardPro cameras, improving object detection accuracy **by** 15%
- Worked in a **team of three** to design and implement **two-way synchronization logic** for database servers
- **Collaborated** with the AI development team to gather requirements and implemented **MongoDB schema** extraction

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

Gettysburg College Remote

Undergraduate Researcher Assistant *May 2024 – Jul 2024*

- Designed and implemented an application in **Java** to optimize strategies and calculate winning probabilities for "All Yellow Zombie Dice," a variant of Zombie Dice
- Developed a **400-line Java** algorithm to simulate human-playable strategies, achieving **99% accuracy** against optimal play using **dynamic programming** and **value iteration**

Projects

Mail Chat *Go, Docker, Kubernetes, Docker Swarm, gRPC, Postgres, MongoDB, RabbitMQ* June 2024 – July 2024

- Used **Go** to build a **distributed multi-microservice** chat application, featuring an email-like form that enables the distribution of the same message to multiple recipients for large-scale marketing purposes
- Developed an **Authentication Service** with **PostgreSQL** for secure user management and a **Broker Service** to handle front-end requests
- Designed an **event-driven architecture** with **RabbitMQ**, using **gRPC** for inter-service communication and **REST APIs** for external integrations
- Containerized microservices with **Docker** and deployed application to **Docker Swarm** and **Kubernetes**‘ for scalability

Books Searcher System *Java, Apache Zookeeper, Java HTTP Server and Client, Protocol Buffer* Dec 2024

- Used **Java** to design a highly scalable backend **Distributed System** that implements a book-searching UI using the **TF-IDF algorithm** to rank books by their relevance
- Developed a highly **fault-tolerant** system using **Apache Zookeeper** to detect and recover when one cluster or aggregator fails
- Used **Google Protocol Buffer** for communication between UI and server, and **HTTP Protocol** to communicate between aggregator and clusters

Calendar 2.0 *React.js, Express.js, Node.js, OracleDB, MongoDB, Bootstrap* Mar 2024 – May 2024

- Used **Express.js** and **React** to design a calendar-based web application, enabling users to efficiently create and manage events
- Implemented a **token-based authentication** system using **Node.js**, with **MongoDB** to manage tokens and user data
- Designed an **OracleDB schema** to store and manage task-related data
- Crafted three distinct, responsive pages using **Bootstrap**: Authentication, Calendar view, and event control panel

Technical Skills

Languages: Java(3ys), JavaScript(3ys), Go(<1ys), Python(2ys), C++(1ys), SQL (Oracle)(1ys)
Frameworks: React, Node.js, Express.js, Postgres, RabbitMQ, MongoDB, OracleDB, Docker, Kubernetes, Docker Swarm, Bootstrap, Couchbase