

ANH (ALAN) BUI

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SKILLS

Languages: Python, Ruby, Go, Java, JavaScript, C/C++.

Technologies: Gin, Springboot, Pytorch, Tensorflow, Rails, Spark, Hadoop, Redis, Postman, AWS, Kafka, Kubeflow, NumPy, Pandas, Grafana, Git, Docker, PostgreSQL, Jenkins, Tableau, Angular, Springboot.

EDUCATION

MS in IT and Management @ Dallas Baptist University

Dallas, TX Dec 2026

MS and BS in Computer Science @ UMass Amherst

Amherst, MA Jan 2024

GPA: 3.7/4.0

Relevant Courses: Object-Oriented Programming, Data Structures, Advanced algorithms, Network and Security, Optimization, Distributed Systems, Machine Learning, Natural Language Processing, Cloud Computing, Systems Architecture.

Awards: Bay State scholarship for outstanding academic records.

EXPERIENCE

Research Assistant

UMass Amherst BioLab

Technologies: *Python, Pytorch, LLM, PostgreSQL, RAG*

Feb 2024 - Dec 2024, Amherst MA

- Designed and implemented a data processing pipeline with **Elasticsearch** to streamline the indexing and embedding of BioLab data.
- Developed a scalable **RAG** framework integrated with DPR using Pytorch and Elasticsearch, achieving a 30% improvement in relevance and a **15%** increase in user engagement.
- Integrated diverse LLMs, including **Llama-2**, **Mistral**, and **StableLM**, with RAG outputs, enhancing language comprehension and significantly improving response accuracy and user satisfaction metrics..

Software Engineer Intern

PILG LLC

Technologies: *Java, Springboot, PostgreSQL, Pytorch*

Jul 2022 - Feb 2023, Garden Grove, CA

- Developed RESTful APIs to retrieve and store data into customer's database.
- Developed SQL schema and queries, improving database operations performance by **25%** across **1000+** users.
- Developed OCR-based system (Tesseract) for extracting key data from immigration forms with **95%** accuracy.
- Integrated GPT-4 API to perform case summarization and analysis, improving lawyer decision-making by **30%** and reducing review time by **40%**.

Software Engineer Intern

Ascenda Loyalty

Technologies: *Ruby on Rails, Hanami, Pytorch, Redis, PostgreSQL, AWS*

May 2020 - Nov 2020, Singapore

- Integrated 10 APIs across services using Ruby on Rails, Kafka, and GraphQL, improving response time by 15% and supporting 3,000+ daily active users across 4 international banks.
- Integrated Redis via AWS ElastiCache, reducing data access latency by 20%, and set up real-time performance monitoring using AWS CloudWatch.
- Developed APIs to retrieve and process 5,000+ gift cards, and designed a robust database schema that served as a reliable data source for multiple downstream services.
- Built a fraud detection service by fine-tuning a RoBERTa-Large model on 15,000+ activities, achieving 75% accuracy, and deploying scalable inference pipelines using Kubeflow and AWS SageMaker.
- Implemented Canary Deployments to route 15% of traffic during database migrations, enabling safer rollouts and early performance anomaly detection.

Research Assistant

UMass CICS

Technologies: *Python, Pytorch, Scikit-learn*

Jun 2019 - Aug 2019, Amherst, MA

- Developed and trained a Bayesian Knowledge Tracing **Hidden Markov Model** for an adaptive tutoring system under Professor Andrew Lan, leveraging Baum-Welch algorithm to optimize learning parameters from 100 student response datasets.
- Enhanced model scalability to process batch sequences of student answers, resulting in a 65% improvement in prediction accuracy for learning outcomes.

PROJECTS

Train Booking Ticket Ecommerce Backend | *Go, Gin, Redis, MySQL, Docker*

April 2024 - Present

- Developed scalable RESTful APIs in Go for a train ticket e-commerce platform using Gin, GORM, and MySQL.
- Implemented JWT-based authentication, role-based access control, and containerized the application using Docker.
- Integrated middlewares for request validation and error handling, with unit and integration tests to ensure reliability.

UMass Amherst Marketplace | *Java, Springboot, Angular, MySQL*

Dec 2023

- Led a team of 3 to build a full-stack e-commerce marketplace application for **50+** UMass students.
- Developed multiple backend APIs using Spring Boot. Designed MySQL database schema, and developed secure shopping cart feature, enhancing user interaction by 25%.
- Implemented secure credit card payment using the Paypal API for better user experience.

Underpressure Coding Problems Classification | *Python, Pytorch*

Nov 2023

- Fine-tuned **BERT-base** on the annotated data and achieve **75% ROC-AUC**.
- Built a pipeline to collect and annotate 300 coding problems from 10+ interviewees, based on my own merit to accurately reflect the difficulties under pressure.

RSNA-MICCAI Brain Tumor Radiogenomic Classification | *Python, Tensorflow*

Jan 2023

- Led a team of 3, trained a **3D CNN** model on dataset of 100 patients' structural **multi-parametric** of 20K MRI scans to detect MGMT genetic sequence that signals potential of developing brain tumor for **BioNLP** UMass.
- Streamlined data pipeline using Tensorflow and Pytorch, which improved the accuracy score to **0.56**.