Tu Nguyen

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Summary

MS in AI candidate (Dec 2026) with 2+ years of Software Engineering experience in scalable backend systems, ML Engineering, and Generative AI. Founder of Memorilla. **Work authorization:** F-1 OPT (STEM-eligible), no sponsorship required until 2029.

Education

The University of Alabama at Birmingham (UAB) *Jan 2025 - Dec 2026*
MS in Artificial Intelligence *GPA: 3.8/4.0*
• *Relevant Coursework:* Artificial Intelligence, Machine Learning, Deep Learning, Foundation of Data Science.

Ho Chi Minh City University of Science *Aug 2018 - Nov 2024*
AS & BS in Information Technology *GPA: 8.63/10.0* ***(Ranked 1st in the BS program)***

Research Experience

Student Researcher *Jul 2026 – Present*
The University of Alabama at Birmingham (UAB), supervised by Dr. Truong-Son Hy Birmingham, AL

- Studied core **Bioinformatics** concepts and reviewed literature on **Drug–Target Affinity/Interaction (DTA/DTI)** prediction.
- Re-implemented **DeepDTA** (CNN-based binding affinity model on drug SMILES and protein sequences) and successfully reproduced its training and evaluation.
- Ran computational experiments for a **Plant Phenotype–Genotype** project on the UAB **Cheaha HPC** cluster.

Projects

Memorilla – AI-Powered English Learning Application (memorilla.app) *Nov 2025 – Present*

- Built an **NLP-driven** dictionary engine with semantic word clustering using **Transformer-based Vector Embeddings** and **pgvector**, plus real-time **AI-generated contextual examples**.
- Engineered a **Generative AI pipeline** with Gemini APIs and **Prompt Engineering** to generate personalized mnemonic stories for long-term retention.
- Configured the **FSRS v6** spaced repetition algorithm (**21 parameters**) to optimize review intervals and personalize learning curves.
- **Technical Stack:** Python (FastAPI), **AI/ML** (Gemini LLM, Transformers, Vector Embeddings), **Data/Infra** (Supabase, pgvector, Render), Dart (Flutter).

Work Experience

Software Engineer *Jun 2022 – Mar 2023*
Bacoor Ho Chi Minh City, Vietnam

- Designed and implemented **50+ RESTful APIs** to facilitate seamless integration with smart contracts across **2 major blockchain networks** (Ethereum, Avalanche) for NFT marketplaces and digital trading platforms.
- Engineered automated cron jobs and asynchronous task queues using **RabbitMQ** for mission-critical logic, successfully processing reward distributions and parameter calculations for batches of **5,000+ mock transactions** with **sub-second latency**.
- **Technical Stack:** Node.js (Express.js, Hapi), MongoDB, Redis, RabbitMQ, Solidity, Ethereum, Avalanche.

Software Engineer *Aug 2021 – Jun 2022*
Waodate Ho Chi Minh City, Vietnam

- Developed and optimized **15+ RESTful APIs** for a consulting platform, including expert search and real-time appointment booking.
- Automated data pipelines by integrating **WordPress Webhooks** with **Airtable APIs**, improving data synchronization efficiency by **70%**.
- **Technical Stack:** Node.js (Express.js), MongoDB, Google Cloud Platform, WordPress, Airtable API.

Technologies & Skills

AI/ML/DL: LLMs, RAG, Transformer Architecture, Fine-tuning, Deep Learning Models, Neural Networks, Generative AI, NLP, Prompt Engineering, Vector Embedding, Prompt Injection Prevention, Bioinformatics (DTA/DTI).

Software & Tools: Python (PyTorch/Scikit-learn), Javascript (Node.js, ExpressJS, Hapi), Java (Spring Boot), Dart (Flutter), SQL, Google Cloud, Git, API Integration, Supabase (PostgreSQL, Authentication), SMTP, Postman, HPC (UAB Cheaha).