YANG TUẤN ANH

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EDUCATION

VNUHCM - University of Science, Ho Chi Minh City, VN   **Oct 2021 – Oct 2025**
GPA: 3.81 (Major: 3.86)

- Bachelors of Science – Advanced Program in Computer Science
- *Coursework*: Data Structures & Algorithms, Database Systems, Software Engineering, Calculus, Linear Algebra, Statistics, Group Theory, General Physics, Communications Management, Ethics in Technology, Operating Systems, Computer Graphics, System Design, Computational Finance, Machine Learning, Natural Language Processing
- *Honors*: Outstanding Student in the Academic category for the Sinh Viên 5 Tốt award; University representative for MCM/ICM 2025
- *Thesis*: UNet-HoVerGNN: Structured Graph Integration into HoVerNet for Enhanced Nuclei Segmentation and Classification (Outstanding Student Thesis) [Report]

National University of Singapore, Singapore   **Aug – Dec 2023**

- Non-graduation, School of Computing
- *Coursework*: Theory of Computation, Computer Vision, Design & Analysis of Algorithms, Intro to Info Security
- *Honors*: Top 10 Southeast Asian student candidates for the NUS ASEAN Master's Scholarship

VNUHCM - High School for the Gifted, Ho Chi Minh City, VN   **2018 - 2021**

EXPERIENCE

Zalos (YC F25) | Founding Engineer, Remote   **Aug – Sep 2025**

- Engineered a PII redaction engine with Microsoft Presidio, automating compliance and cutting manual review time.
- Built a visual pipeline for browser automation agents in finance, in close collaboration with enterprise clients.
- Developed and optimized LLM applications with Next.js, FastAPI, AWS, and LangChain for scalable deployment.

Autonomous.ai | AI Engineer, Ho Chi Minh City   **Jun 2024 – May 2025**

- Implemented the core logic of neural network models in Solidity for our blockchain products.
- Developed features for a decentralized AI agent factory with social and knowledge capabilities.
- Built a semantic knowledge base service with FastAPI, Milvus and Mistral embeddings for RAG agentic AIs.

Autonomous.ai | Software Engineer Intern, Ho Chi Minh City   **Jun – Jul 2023**

- Researched generative algorithms such as Perlin noise, cellular automata, fractals and computational geometry.
- Worked on a generative art collection on terrain map generation, as part of contribution towards https://generative.xyz/.
- Learned and utilized P5.js and WebGL to build and design generative art models.

LEAN Platform | Software Engineer, Remote   **Jun 2022 – Mar 2023**

- Engineered an MVP, setting the foundation for product launch and creating direct study engagement for 1000+ youths.
- Assisted in data collecting and sampling for the webapp's machine Learning model – Study drowsiness detection.
- Learned and utilized NextJS, TailwindCSS, Mobx to build study streaming tools and controls for Lean Social webapp.

Tiki | Software Engineer Intern, Ho Chi Minh City   **Jul– Sep 2022**

- Developed demo applications for various components as demonstration for Tini App – a JS Framework by Tiki.
- Collaborated in a cross-functional team of 6 engineers to develop software for third-party investors.
- Learned and utilized React, NextJS, Typescript and NodeJS to contribute development in Tini App

LEADERSHIP & ACTIVITIES

VNUHCM-University of Science | Ho Chi Minh City, VN   (Oct 2021 – Oct 2025)

- **SAB Academy** | Development Team Leader **&** Event Operation member
- **Google Developer Group on Campus – HCMUS** | Backend Specialist, AI&DS Speialist, Advisor
- **Design ITUS** | Graphic Design Member - Academic Club of Design, Faculty of IT

ProjectX – Mentorship & Operation, Tech & Product Associate – a non-profit fellowship program to connect tech startups with the best talents and offer mentorship, career orientations, and technical/soft-skills training through events/workshops and building communities for high-caliber students (Nov 2023 – July 2025)

Hanoi Math Modelling Competition – Research Department – a national-scale project on research and development of mathematical applications for high school students, including competitions and lectures, running since 2015 and with 11.000 followers on Facebook (May 2022 – May 2024)

STEAM for Vietnam | Teaching Assistant, Remote   **Feb 2022 – Ongoing**
- Managed interns for STEAM For Vietnam's Summer Internship Program – a 2-month program on technological soft skills, insights into the tech industry and developing projects in groups, which sets opportunities for professional growth
- Generated and initiated ideas for future class curriculums, on Basic CS in Python, and Game Development on Pygame
- Operated technical sites for live classes, ensuring a smooth and effective experience for students and instructors

PUBLICATIONS & APPEARANCES
- "UNet-HoVerGNN: Structured Graph Integration into HoVerNet for Enhanced Nuclei Segmentation and Classification", ICMV 2025, Oct 2025 (first author)
  Tuan-Anh Yang, Hai-Dang Nguyen, Ngoc-Thao Nguyen
  [Paper] [Code]
- "Mushroom for improvement: prototypical few-shot learning with multimodal fungal features", CLEF 2025, Sep 2025 (first author)
  Tuan-Anh Yang, Minh-Quang Nguyen
  [Paper] [Code]
- "Shrec 2025: Protein Surface Shape Retrieval Including Electrostatic Potential", Computers & Graphics, May 2025
  Taher Yacoub, Camille Depenveiller, …, Tuan-Anh Yang, …, Matthieu Montès
  [Paper] [Code]
- "The Fourth Monocular Depth Estimation Challenge", CVPRW 2025, Apr 2025
  Anton Obukhov, Matteo Poggi, Fabio Tosi, Ripudaman Singh Arora, Jaime Spencer, Chris Russell, Simon Hadfield, Richard Bowden, …, Thien-Phuc Tran, Tuan-Anh Yang, Minh-Quang Nguyen, …
  [Paper] [Code]
- "MOB-GCN: A Multiscale Object-Based Graph Neural Network for Hyperspectral Image Classification", Feb 2025 (first author, under review)
  Tuan-Anh Yang, Truong-Son Hy, Phuong D. Dao
  [Paper] [Code]
- "Optimizing Sperm Detection and Tracking in Fluids with Equalize Class Representation Augmentation", MediaEval workshop, MMM 2024, Jan 2024 (Distinctive Mention Award)
  Trong-Hieu Nguyen-Mau, Quoc-Huy Trinh, Ngoc-Linh Nguyen-Ha, Tuong-Vy Truong-Thuy, Tuan-Anh Yang, Hai-Dang Nguyen, Ngoc-Thao Nguyen, Minh-Triet Tran
  [Paper]
- "Deep Learning Hierarchical Methods for Insect Pest Recognition on Plants", SoICT 2023, Oct 2023
  Tuong-Nghiep Diep, Thien-Phuc Tran, Tuan-Anh Yang, Vinh-Phat Ho-Ngoc
  [Paper]
- "Sketch-based 3D Animal Fine-Grained Retrieval (SketchANIMAR)", Computers & Graphics, Jul 2023
  Trung-Nghia Le, Tam V. Nguyen, Minh-Quan Le, Trong-Thuan Nguyen, Viet-Tham Huynh, Trong-Le Do, Khanh-Duy Le, Mai-Khiem Tran, Nhat Hoang-Xuan, Thang-Long Nguyen-Ho, Vinh-Tiep Nguyen, …, Tuan-Anh Yang, …, Akihiro Sugimoto, Minh-Triet Tran
  [Paper]
- "Text-based 3D Animal Fine-Grained Retrieval (TextANIMAR)", Computers & Graphics, Jul 2023
  Trung-Nghia Le, Tam V. Nguyen, Minh-Quan Le, Trong-Thuan Nguyen, Viet-Tham Huynh, Trong-Le Do, Khanh-Duy Le, Mai-Khiem Tran, Nhat Hoang-Xuan, Thang-Long Nguyen-Ho, Vinh-Tiep Nguyen, …, Tuan-Anh Yang, …, Akihiro Sugimoto, Minh-Triet Tran
  [Paper]

TECHNICAL PROJECTS

Fusion at the Foregut: CLIP-Based Prototypical Learning with DINOv2 Refinement for Endoscopic Image Analysis **Aug 2025**

- A multimodal framework for anatomical site classification and retrieval in endoscopic images, integrating CLIP-based prototypical learning with DINOv2 refinement, submission for the ENTRep Challenge at ACMMM 2025.
- Hybrid inference strategy using initial prototypical learning from BiomedCLIP embeddings for coarse classification, and SurgeNet pretrained DINOv2 for fine-grained binary classification.
- Placed 5th in image classification (91.64% accuracy), 3rd in image-image retrieval (88.53% Recall@1), and 6th in text-image retrieval (84.00% Recall@1)

Geo-Contextual Embeddings and Label Propagation for Commuting Flow Prediction: Investigating the Impact of the Francis Scott Key Bridge Collapse on Baltimore Traffic and Bus Route Optimization **Jan 2025**

- A comprehensive analysis of Baltimore's transportation challenges, focusing on the impact of the Francis Scott Key Bridge collapse and public transit optimization, submission for the Interdisciplinary Contest in Modeling 2025.
- Developed a novel approach combining Exponential Moving Average (EMA) modeling for traffic flow prediction and Geo-contextual Multitask Embedding Learning (GMEL) for optimizing bus routes.
- Identified key areas for transit improvement using label propagation and graph attention networks and designed six new bus routes optimized for both efficiency and safety.

Low-Resource Chinese-Han Vietnamese Translation with mT5 and Backtranslation **Nov – Jan 2025**

- Fine-tuned a mT5 model tailored for Chinese-Han Vietnamese translation, addressing the challenges of data scarcity and linguistic diversity, achieving BLEU scores of 70.1.
- Enhanced the model with a sampling-based backtranslation method that leverages extensive monolingual corpora.
- Proposed a corpus construction strategy using LASER embeddings and the Hungarian Matching Algorithm to extract parallel sentences from bilingual news sources.

MnemeAI Smart Note Assistant - AI Developer **Mar – Oct 2024**

- A web application designed to assist users with note-taking, task management, and calendar integration, won 4th place for the HCMUS AI Innovation Hackathon.
- Integrated LLMs and Retrieval-Augmented Generation (RAG) from pgvector to process user inputs, generate relevant outputs, and retrieve information from the knowledge base, served from Notion's API.
- Deployed a CI/CD Pipeline with AWS EC2 and Docker containerization, ensuring production-ready stability.

Unlocking Tennis Dynamics: Analyzing Momentum, Predicting Swings and Beyond - MCM 2024 **Feb 2024**

- Providing a comprehensive framework for modeling and predicting tennis match dynamics using scoring data, submission for the Mathematical Contest in Modeling 2024
- An adapted Markov Chain model using a Bradley-Terry formulation to capture evolving player performance
- Perform correlation analysis between momentum and game results with deep neural network models such as RNN, GRU, and LSTM to develop probabilistic models guided by the stochastic deterministic formulations.

SNORD - Backend Developer **Mar – May 2024**

- An electronic cigarette solution empowering user to seamlessly monitor and regulate their smoking habits through innovative hardware and a user-friendly mobile application.
- Designed API endpoints using Golang and Firebase for device access and statistical processing.
- Deployed a CI/CD Pipeline with GCP Compute Engine and Docker, ensuring production-ready stability.

Modelling Kangaroo Care – SCUDEM 2023 **Nov 2023**

- Construct a differential equation modelling KMC interactions with Convolution and Ecological Functional Response.

- Addressed important factors contributing in infant mortality, modelling irregular caring patterns and its impacts.
- Provided insights and limitations of the model for KMC practitioners.

FoodFeed - Backend Developer   **Sep – Nov 2023**
- An Android app that can help people share food locations and help them make reasonable decisions for their eating.
- Designed API endpoints using Django, PostgreSQL, S3 and Redis on social media features such as user authentication and post CRUD, query and manipulating food and shop data based on fuzzy matching algorithms and geolocation.
- Deployed a CI/CD Pipeline with AWS EC2 and Docker containerization, ensuring production-ready stability.

Clip The Trigger: YOLO-CLIP for Gunpoint Gaze – Computer Vision Engineer   **Sep – Nov 2023**
- NUS CS4243 project to solve weapon presence binary classification - received 9.75/10 for Methodology & Results.
- Developed a YOLOv8 - CLIP ensemble, with a novel data augmentation technique for equalizing class representation.
- Applied PyTorch, OpenCV, LabelStudio, HuggingFace, Ultralytics to experiment and implement models.

5tasy – ML Engineer   **Aug – Sep 2023**
- Translates a .pdf file, preserving the original layout of that .pdf file using MaskRCNN, and EasyOCR for tabular format detection, and envit5-translation for file translation. Achieved Second Prize of the Cinnamon AI Bootcamp 2023.
- Developed the Frontend with NextJS and TailwindCSS, and served inference via Django, Firebase and PostgreSQL.
- Deployed a CI/CD Pipeline with AWS EC2 and Docker containerization, ensuring production-ready stability.

MyThorch – Fullstack Web Developer   **Mar 2023**
- Top 4 Finalist submission to the OpenAI Stack Hackathon - a document interaction app that leverages user behavior. Constant data collection helps to adapt to the user's needs for a personalized experience.
- Used React for the frontend and Flask for the backend, GPT-3 generates personalized documents based on user focus, while Redis stores previous interactions to reduce token input.

COMPETITIONS & AWARDS

3rd, 5th, 6th place - ENTRep Challenge @ ACMMM 2025 – Workshop Challenge - International	**Aug 2025**
Winner – ForamCLEF Challenge, FGVC12 @ CVPR 2025 – Workshop Challenge - International	**July 2025**
Silver Medal (Top 8%) - IYMC 2024 – Maths Olympiad - International	**Feb 2025**
Second place - National Innovation & Startup Competition, CCU – Hackathon - International	**Nov 2024**
Fourth place - HCMUS AI Innovation – Hackathon - University	**Oct 2024**
Top 25/200 – Da Nang Code League, Regular Track – Competitive Programing - National	**May 2024**
Semi Finalist – HCMUS Thách Thức – Academic competition - University	**Apr 2024**
Top 15/500 – GDSC Hackathon Vietnam - Hackathon - National	**Feb 2024**
Outstanding Award – SCUDEM 2023 - International	**Dec 2023**
Silver Medal (Top 5%) - IYMC 2023 – Maths Olympiad - International	**Nov 2023**
Top 5/7000 - Redis Side Quest, Lablab.ai - Hackathon - International	**June 2023**
Scholarship – DiscoverNUS Exchange Program – Scholarship	**May 2023**
Top 4/7000 - OpenAI Stack Hackathon, Lablab.ai – Hackathon - International	**Mar 2023**
Best Paper - International Student Science Forum, HCMC, 2022 – Conference - National	**Nov 2022**
Third Place out of 300, GameUIT Hackathon, VNUHCM UIT – Hackathon - Provincial	**Nov 2022**
Silver Medal (Top 10%) - IYMC 2022 – Maths Olympiad - International	**Dec 2022**
Third Place out of 30, IT Hackathon, GDSC HCMIU – Hackathon - Provincial	**Jul 2022**
Top 30 semi-finalist, Tiki Hacking Trail 2022, Tiki – Hackathon - National	**Jun – Jul 2022**

- First Place - Engaholic English Competition, HCMUS – English competition - University **Apr – May 2022**

- Regional finalist, Youth IT Competition (Tin học trẻ) – Informatics Olympiad - Regional **Apr – Dec 2021**
- Finalist, Hanoi Mathematical Modelling Contest 2021 – Mathematical Modelling - National **Aug – Nov 2021**
- Qualifier, ICPC Vietnam Southern Round – Informatics Olympiad - Provincial **Dec 2021**

- Third place, HSG Regional Round in Informatics – Informatics Olympiad - Provincial **May 2018**

SKILLS

Programming Languages: C/C++, Python, SQL, Dart, JavaScript, Golang, Solidity

Frameworks/Tools: TailwindCSS, NextJS, Express, Flask, Django, FastAPI, PostgreSQL, Firebase, MongoDB, Redis, Milvus, Tensorflow, Pytorch, Langchain, Playwright, Stagehand, Flutter, Android Studio, Docker, AWS, GCP

Languages: English (fluent, 7.5 IELTS), Vietnamese (native speaker), Cantonese (beginner), Spanish (beginner)