

Do Tri An Le

triandole@gmail.com | trianle171.github.io | linkedin.com/in/trianle | github.com/TriAnLe171

EDUCATION & CERTIFICATIONS

Ph.D. in Computer Science, University of Houston

Houston, TX

Research Areas: NLP, Computer Vision, Multimodal Learning

Expected May 2031

Bachelor of Arts, summa cum laude, Wabash College

Crawfordsville, IN

Double Major in Computer Science & Mathematics – GPA: 4.0/4.0

Jan 2026

Study & Research Abroad: Aquincum Institute of Technology (Hungary, Jan 2025 – May 2025).

Relevant Courses: Data Science, Deep Learning, Data Structures & Algorithms, Algorithm Design and Analysis, Theory of Programming Language, Mobile Software Development, Statistical Modeling, Machine Organization, Numerical Analysis, Probability, Linear Algebra.

Certifications: Fundamentals of Deep Learning (NVIDIA, Mar 2025); Building Transformer-Based Natural Language Processing Applications (NVIDIA, Apr 2025).

PUBLICATIONS

Le, D.T.A., Köller, D.Á., Deng, Q., and Molontay, R. “MemeMatch: A Large-Scale Dual-Context Multimodal Dataset and Retrieval System for Internet Memes.” In *Proceedings of the International AAAI Conference on Web and Social Media (AAAI-ICWSM 2026)*.

EXPERIENCE

Digital Operations & Analytics Intern

May 2025 – Aug 2025

Citywide Classroom, enFocus

South Bend–Mishawaka, IN

- Built automated data pipelines using **Monday.com** and **NetCloud APIs** to extract and analyze broadband access and user data across the South Bend–Mishawaka region.
- Conducted EDA and developed interactive dashboards with **Google Data Studio** and **Python** to evaluate access disparities and program impact; delivered insights to inform internal planning and stakeholder communication.

R&D Data Analyst Intern

May 2025 – Aug 2025

Re-Volt Innovations, enFocus

South Bend–Mishawaka, IN

- Evaluated copper-clad aluminum (CCA) windings for AC motors using data analysis and electrical modeling; translated performance–cost trade-offs into recommendations to reduce material costs while maintaining efficiency for EV traction motors.
- Contributed to prototype development and co-authored a business plan (market segmentation, competitive analysis, unit economics, impact projections), advancing the project to MVP stage for future funding and deployment.

Machine Learning Research Intern

Jan 2025 – May 2025

Human and Social Data Science Lab (HSDSLab), BME

Budapest, Hungary

- Engineered web scraping and data pipelines to extract and preprocess 870K+ memes from social media platforms, enabling large-scale quantitative analysis of meme content.
- Performed topic and sentiment modeling with **BERTopic** and **RoBERTa**; analyzed trends in meme themes, sentiment dynamics, and user engagement.
- Constructed an end-to-end dual-contextual analytical framework for modeling the correlations between meme attributes and virality metrics, offering insights into factors driving meme popularity and cultural impact.

Summer Undergraduate Math & Statistics Accelerator

Jun 2024 – Aug 2024

IMSI, The University of Chicago

Chicago, IL

- Selected as one of 20 scholars for a fully-funded, 8-week competitive program designed to prepare undergraduates for graduate-level rigor in mathematical sciences.
- Gained advanced knowledge in Real Analysis, Abstract Linear Algebra, Probability Theory, and Statistical Modeling through intensive coursework and problem-solving sessions led by University of Chicago professors.

Machine Learning Research Assistant

May 2023 – Aug 2023

Department of Mathematics & Computer Science, Wabash College

Crawfordsville, IN

- Fine-tuned CNN models (YOLO) to achieve high-accuracy object detection in images, videos, and webcams.
- Leveraged RNN architectures for solar activity forecasting using the Sunspots dataset and utilized LSTMs for sentiment analysis on IMDB movie reviews, extracting actionable insights from text data.

PROJECTS

MemeMatch | *FastAPI, Transformers, Multimodal NLP, Full-Stack*

Feb 2025 – Jan 2026

- Built and deployed a multi-platform meme-recommendation framework: **FastAPI** microservices orchestrate **Google Gemini** LLMs for prompt-engineered intent parsing, returning personalized memes/templates in real time.
- Architected multimodal NLP pipeline (**SentenceTransformers**, **RoBERTa**) for semantic search and emotion detection; applied OCR (**EasyOCR**, **PaddleOCR**) and image captioning (**BLIP**) for joint image-text meme analysis.
- Developed a scalable zero-shot meme-usage-classification model for 300K+ samples using Hugging Face Transformers (**BART-Large-MNLI**), with dynamic batching, GPU memory optimization, and multi-label inference.
- Delivered a responsive web interface (**HTML/CSS/JS**) and a native Android app (**Kotlin**, **Jetpack Compose**) supporting natural-language and image queries, UX/UI personalization, **Firebase Authentication**, and **Cloud Firestore** database.

WeatherApp | *Kotlin, Jetpack Compose, MVVM, Hilt, Retrofit*

Apr 2025

- Engineered an Android weather app with custom city lists and live weather via **OpenWeatherMap** API (temperature, humidity, wind, sunrise/sunset).
- Designed a responsive, state-driven UI powered by **Kotlin Coroutines** and **StateFlow**; integrated **Coil** for image loading and **Hilt** for dependency injection.

BeastBuy | *Kotlin, Jetpack Compose, MVVM, Room, Hilt, Coroutines*

Mar 2025

- Shipped an Android shopping app with item creation/editing, category & priority tagging, search, filter, sort, offline storage, and a real-time summary dashboard for tracking total, high-priority, and purchased items.

MineSweeper | *Kotlin, Jetpack Compose, MVVM, Material 3*

Feb 2025

- Created a modern Minesweeper game for Android with tap/flag gestures and three difficulty levels, powered by state-driven game logic for board generation, neighbor counts, mine flagging, and win/loss detection; added dynamic win/lose visuals, sound, and toast notifications.

Digits & Celebrities' Faces Generator | *PyTorch, NumPy, OpenCV*

May 2023 – Aug 2023

- Trained and fine-tuned a **DCGAN** model on CelebA and MNIST datasets to synthesize realistic images of celebrity faces and handwritten digits.

TECHNICAL SKILLS

Programming Languages: Python, Kotlin, SQL, HTML/CSS/JavaScript.

Deep Learning & NLP: PyTorch, Hugging Face, TensorFlow.

Data Science: NumPy, Pandas, Scikit-Learn, XGBoost, LightGBM, Matplotlib.

Research Ops: Linux/Bash, Docker, Git, LaTeX, Weights & Biases (W&B).

Android Development: Jetpack Compose, Coroutines (Flow/StateFlow).

AWARDS & HONORS

J. Crawford Polley Prize in Mathematics and Computer Science – Wabash College, May 2026

Mackintosh Fellow – George Lewes Mackintosh Memorial Fund, May 2026

Phi Beta Kappa Prize – National Liberal Arts & Sciences Honor Society, Mar 2026

Robert Wedgeworth '59 Library Research, Scholarship, and Creativity Award – Wabash Undergraduate Research Committee, Jan 2026

Phi Beta Kappa – National Liberal Arts & Sciences Honor Society, Elected May 2025

Top 2 – Michigan Autumn Take-Home (MATH) Challenge 2023

Top 4 – Indiana Collegiate Mathematics Competition (ICMC) 2023

Dean's List – Every semester

Presidential International Scholar – \$160,000 Scholarship for 4 Years

PART-TIME EMPLOYMENT

Mathematics and Computer Science Tutor

Aug 2023 – Jan 2026

Quantitative Skills Center (QSC), Wabash College

Crawfordsville, IN

- Delivered one-on-one tutoring across multiple math and computer science courses, maintained accurate session records, and coordinated with the QSC Director on session scheduling and service improvements.

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

Vice President, Indoor Soccer Club

2023 – 2024

Wabash College

Crawfordsville, IN

- Organized campus tournaments and intercollegiate friendlies; grew membership to **30+** active members; managed **twice-weekly** practices.

Vice President, Computer Science Club

2023 – 2024

Wabash College

Crawfordsville, IN

- Led weekly peer coding sessions; coordinated **5** guest tech talks; organized **2** student hackathons (20–30 participants each).

Membership

Wabash College

Crawfordsville, IN

- **Computer Science Club**, Aug 2022 – Jan 2026
- **Indoor Soccer Club**, Aug 2022 – Jan 2026
- **International Student Association (ISA)**, Aug 2022 – Jan 2026
- **Glee Club**, Aug 2024 – Dec 2024
- **Wamidan World Music Ensemble**, Aug 2022 – Dec 2023