

# Thong Pham

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## EDUCATION

### University of Colorado, Boulder

Boulder, CO

Master of Science: Computer Science (Specialization: Machine Learning, GPA 4.0 / 4.0)

June 2024 - December 2026

- **Relevant Courses:** Advance Data Structure, RSA, and Quantum Algorithm | Approx of Algorithm and Linear Programming | Deep Learning for Natural Language Processing | Introduction to Generative AI | Introduction to Computer Vision

### University of California, Irvine

Irvine, CA

Bachelor of Arts: Business Economics

September 2019 - December 2022

## WORK EXPERIENCE

### Mercor

Remote, Online

Computational Analyst (Research Integration)

February 2025 - Present

- **Analyzed over 50 weekly research publications** to extract key information on algorithm and API design principles using these insights to rigorously test and evaluate the capabilities of **leading AI lab models** for advanced research applications.
- **Validated and refined over 25 weekly human data prompt** submissions, ensuring strict adherence to quality standards and precise alignment with research objectives for effective AI model evaluation and development.

Software Engineer LLM (STEM Model)

- **Resolved over 250 software bugs** weekly across Python, Java, and C/C++ codebases for leading AI research labs, achieving a **first pass fix accuracy rate exceeding 99%**.
- Ensured all code contributions rigorously adhered to the stringent guidelines of top AI research labs, maintaining a **major error rate below 1%** which significantly reduced code review times for fellow researchers and team leads.

### Kashmir World Foundation

Richmond, VA

Machine Learning Engineer Intern

September 2024 - February 2025

- Utilized **XGBoost**, **PyTorch**, and **OpenCV** on **large scale bioacoustic data** (over 200K audio and video clips) to achieve **91.6% classification accuracy**, demonstrating end-to-end data ingestion, hyperparameter tuning, and deployment.
- Performed **exploratory data analysis (EDA)** and **feature selection** (random forests, correlation analysis) on complex signal based datasets to enhance model interpretability for domain experts studying endangered species.
- Create interactive **Power BI** and **Tableau** dashboards to present modeling insights and trend analyses, informing **conservation researchers** and decision-makers on species behavior and habitat threats.

### True Path Financial

Irvine, CA

Associate Data Analyst

February 2023 - April 2024

- Built **machine learning models** (K-Nearest Neighbors, Isolation Forest) on transactional datasets exceeding **500K records** for financial anomaly detection, increasing **fraud detection accuracy by 11.3%**.
- Leveraged **Power BI**, **Tableau**, and **Seaborn** to create interactive dashboards, guiding executive decisions on investment strategies and operational improvements.
- Transitioned key financial data from SQL to **MongoDB**, improving **query performance by 30%** and enabling **faster analytics** on semi-structured customer data.

## PROJECTS

**AI Pong with NEAT** | Python, NEAT (NeuroEvolution of Augmenting Topologies), HuggingFace

December 2024

- Developed a self-learning AI agent that uses NEAT to evolve neural network topologies and master the game of Pong from scratch. Over the course of **300+ generations**, the AI achieved near human performance, demonstrating **robust improvements** in reflex based decision by optimizing reward structures and population parameters, **and total training time was reduced by 20%**.

**Retro Kong AI (PPO)** | Python, PPO (Proximal Policy Optimization), HuggingFace

January 2025

- Developed an AI agent to play the 1980s arcade game “**Kong**,” with barrels rolling toward the player’s character. **Using Proximal Policy Optimization** in a custom environment mirroring original game physics, the agent refined its platform navigation and dodging strategies. **By tuning learning rate and clip range**, it exhibited near human reflexes over multiple training epochs, illustrating PPO’s effectiveness in mastering classic arcade challenges.

## TECHNICAL SKILLS

**Programming Languages:** Python (TensorFlow, Scikit-learn, Keras, PyTorch, Seaborn, OpenCV), R, Java, C/C++, Swift, SQL.

**Tools & Frameworks:** Git (CI/CD), Power BI, Tableau, Excel, PowerPoint, Word, Vantage API, Microsoft Outlook, Docker

**Data Engineering & Big Data:** MongoDB, AWS (S3, EC2), Google Cloud (GCP).

**Language:** English (Native), Vietnamese (Native), Spanish (Intermediate).