Lê Ngọc Anh Khoa

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Objective

Passionate AI engineering student seeking an internship to apply machine learning and reinforcement learning skills in real-world projects.

Education

University of Science - VNUHCM, Information Technology - Computer Science — Sept 2022 – Present

- GPA: 8.23 / 10.0
- **Revalent Course:** Introduction to Machine Learning, Algorithm Design and Analysis, Introduction to AI, Introduction to Big Data, DSA, OOP, ...

Technical Skills

Programming Languages: Python (NumPy, Pandas), C++

AI/ML Frameworks: PyTorch, TensorFlow, Scikit-learn, Hugging Face Transformers

AI Specialties: Computer Vision (CLIP, BLIP), Reinforcement Learning (Q-learning), Neural Networks, Multimodal Systems

Tools & Platforms: Docker, Git/GitHub, FAISS, Gradio, LaTeX

Soft Skills & Languages

Problem Solving: Algorithm design, mathematical reasoning, optimization techniques

Communication: Technical documentation, collaborative development

Languages: Vietnamese (Native), English (Intermediate)

Projects

Multimodal Fashion Search Engine — *Python, PyTorch, CLIP, FAISS*
github.com/pipoiwoczz/Fashion-Search-Engine

- Built end-to-end search engine processing 50k+ fashion images with multimodal (image/text) query support
- Implemented CLIP embeddings + FAISS indexing achieving **<0.5s** latency (98% recall@10)
- Integrated BLIP for automatic captioning and Gradio UI, improving text-search accessibility
- Reduced storage requirements by 40% through optimized preprocessing pipeline

Reinforcement Learning for Game AI — *Python, Q-learning, NumPy*
github.com/pipoiwoczz/Tic-tac-toe-RL-Agent

- Designed Q-learning agent achieving **95% win rate** against humans in Tic-Tac-Toe
- Implemented state hashing and ϵ-greedy exploration for efficient convergence
- Developed interactive GUI to visualize agent's decision-making process

Neural Network from Scratch for Digit Recognition — *Python, NumPy*
github.com/pipoiwoczz/Simple-Neural-Network

- Developed feedforward neural network with backpropagation achieving **98% accuracy** on MNIST
- Implemented activation functions (ReLU/Sigmoid) and adaptive learning rate scheduler
- Visualized learning dynamics and decision boundaries for model interpretation

Logic-Based AI Reasoning Agent *Python, Automated Reasoning*
github.com/pipoiwoczz/AI-Reasoning-Agent

- Developed symbolic AI agent using propositional logic and SAT solvers (Z3) for dynamic decision-making
- Implemented real-time inference engine processing environmental percepts to avoid hazards
- Visualized agent's knowledge state and reasoning process using Tkinter
- Achieved 100% survival rate in stochastic environments through probabilistic reasoning

Game Engine System Design *C++, Software Architecture*
github.com/pipoiwoczz/Game-Engine-Architecture

- Architected modular game engine with 20+ decoupled components using OOP principles
- Implemented multi-threaded rendering pipeline improving frame rate by 40%
- Designed serialization system for game state persistence with compression
- Developed plugin system for dynamic behavior modification at runtime