Doan Van Tai

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Profile

Final-year Computer Networks and Communications student at UIT–VNUHCM, working toward a career as a Research Engineer. Experience building an SDN network digital twin, a deep reinforcement learning routing agent, and cloud delivery infrastructure. Interested in research and R&D opportunities in networking and intelligent systems.

Education

University of Information Technology, VNU-HCM 2023 — 2027 (expected)
B.Eng. in Computer Networks and Communications · GPA 3.52 / 4.00

Research Experience

Network Digital Twin Research — Project Lead 2025 — 2026
UIT-supported undergraduate research · Advised by Dr. Huynh Van Dang

- Built a Mininet / Ryu testbed synchronized bidirectionally with Eclipse Ditto; archived experiments measured upward sync p95 at 1.017 s over 30 trials.
- Implemented anomaly detection, what-if analysis, and closed-loop mitigation. The stored controller A/B study measured h3 throughput at 0.295 Mbps OFF versus 2.146 Mbps ON under UDP flood (32 trials, 8 blocks).
- Preserved experiment artifacts and offline reproduction scripts. Detector limitations and the what-if operating region are documented in the project.

State–Model–Regret for Network Routing 2026 — Present
Research Advisor: Dr. Huynh Van Dang
Ongoing research into the effects of current-state information and action-response model fidelity on expected routing decision regret. Explores uncertainty, stale telemetry, queueing systems, and counterfactual decision-making. This is exploratory work, not a claimed publication or confirmed contribution.

Selected Engineering Projects

Deep Reinforcement Learning for SDN Routing
PyTorch · Gymnasium · Mininet · Ryu · Vue / Flask

- Implemented Dueling / Double DQN with prioritized replay, an 81-dimensional state, action masking, and curriculum learning.
- Connected the agent to an SDN testbed and an OSPF comparison pipeline across congestion and failure scenarios.

Cloud Infrastructure & GitOps on AWS — Team Project
Terraform · EKS · GitHub Actions · ArgoCD · Prometheus

- Contributed infrastructure as code and GitOps delivery for a three-tier application, with Blue/Green rollout analysis, observability, and security controls.

Technical Skills

Networks & digital twins: Mininet · Ryu · OpenFlow · Eclipse Ditto · TCP/IP · Linux
Learning & experimentation: Python · PyTorch · Gymnasium · scikit-learn · NumPy · pandas
Cloud & engineering: AWS · Docker · Kubernetes · Terraform · ArgoCD · GitHub Actions

Certification

AWS Certified Solutions Architect – Associate (SAA-C03), 2025.