Nam Nguyen

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EDUCATION

Oregon State University — Mar 2022 - Mar 2027 (Expected)
Ph.D. in Electrical & Computer Engineering/Artificial Intelligence — Corvallis, OR, US
Focus area: Information Theory, Machine Learning, Neural Data Compression

TECHNICAL SKILLS

- **Machine Learning:** Computer Vision, Deep Neural Networks, LLMs, AI Agents.
- **Programming Skills:** Python, MATLAB, C/C++, LaTeX.
- **Software Tools:** Pytorch, Tensorflow, MATLAB Toolboxes, CVX.

WORK EXPERIENCE

Research Assistant | Oregon State University — Dec 2022 - Present
Universal rate-distortion-classification representations for lossy compression
- Developed a universal representation framework to jointly optimize distortion-classification tradeoffs.
- Implemented compression models (VAE+GAN+CNN) in PyTorch on MNIST/SVHN with minimal loss versus specialized encoders.

Machine Learning Research Intern | Deakin University — Jul 2025 – Sep 2025
AI Agentic Negotiation
- Implemented and extended the *LLM-scorable negotiation* framework for multi-agent negotiation.
- Developed simulations with belief updates, offer–counteroffer dynamics, and strategic reasoning for cooperative, competitive, and malicious agents.
- Evaluated negotiation performance across multiple locally hosted LLMs (e.g., LLamA 3, Qwen3, LLavA) using Ollama.

Research Assistant | Posts and Telecommunications Institute of Technology — Mar 2019 - Mar 2023
Design and Security Analysis of Satellite-based Free-Space Quantum Key Distribution (QKD) Systems for Wireless and Vehicular Networks
- Designed and evaluated satellite-based QKD architectures, incorporating link-layer retransmissions, relaying schemes, and security performance metrics.
- Conducted MATLAB-based simulations to quantify performance and validate analytical results.

SELECTED PUBLICATIONS (GOOGLE SCHOLAR)

[1] [**Preprint, 2025**] **Nam Nguyen**, Thuan Nguyen, Thinh Nguyen, and Bella Bose. *A Theory of Universal Rate-Distortion-Classification Representations for Lossy Compression.* [PDF]
[2] [**IEEE ITW, 2025**] **Nam Nguyen**, Thuan Nguyen, Thinh Nguyen, and Bella Bose. *Universal Rate-Distortion-Classification Representations for Lossy Compression.* [PDF]
[3] [**IEEE VTC, 2024**] **Nam Nguyen**, An Vuong, Thuan Nguyen, and Thinh Nguyen. *On Minimizing Symbol Error Probability for Antipodal Beamforming in Gaussian MIMO Wiretap Channels.* [PDF]
[4] [**IEEE ICSSC, 2023**] **Nam Nguyen**, Thang V. Nguyen, Ngoc T. Dang, and Vuong Mai. *Performance of Satellite Quantum Key Distribution under Atmospheric Turbulence-Induced Phase Fluctuations.* [PDF]

AWARDS & HONORS

- NSF Student Travel Grant, AERPAW Spring Workshop – North Carolina State University — 2025
- Graduate School's Scholarly Presentation Award – Oregon State University — 2024, 2025
- Second Prize, National Scientific Research Contest — 2020