



# 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

**Oregon State University** Corvallis, OR, US  
M.S. in Electrical & Computer Engineering Dec. 2024  
Thesis: *On Minimizing Symbol Error Probability using Beamforming in MIMO Wiretap Channels*

## TECHNICAL SKILLS

- **ML/AI:** Image/Video Compression, Computer Vision, Generative Models
- **Programming:** Python, MATLAB, C/C++
- **Frameworks/Tools:** PyTorch, TensorFlow, CompressAI, CVX

## WORK EXPERIENCE

**Research Assistant** | Oregon State University Mar 2022 - Present  
*Cross-Domain Lossy Compression via Rate- and Classification-constrained Optimal Transport (OT)*

- Developed a unified compression framework integrating bit-rate, distortion, classification, and perceptual constraints for robust cross-domain generalization.
- Implemented deep learning (VAE, WGAN, and CNN) models with differentiable quantization and entropy-constrained losses for image restoration tasks. Validated on CIFAR-10, ImageNet, and Kodak datasets, showing strong theory-to-practice alignment.

*Universal Rate-Distortion-Classification (RDC) Representations for Lossy Compression*

- Designed a trainable RDC objective coupling rate, distortion, and accuracy for semantically meaningful compressed features.
- Built PyTorch compression models with differentiable quantization and entropy losses, producing empirical RDC curves. Demonstrated latent features serve as compact codecs supporting classification with minimal accuracy loss.

**Machine Learning Research Intern** | Deakin University Jul 2025 - Sep 2025  
*AI agentic negotiation*

- Extended a multi-agent negotiation evaluation framework; automated experiments, logging, and reproducibility across local models (e.g., LLaMA/Qwen families).
- Implemented belief updates and offer-counteroffer dynamics; designed metrics and dashboards for comparative analysis.

## SELECTED PUBLICATIONS ([GOOGLE SCHOLAR](#))

- [1] **Nam Nguyen**, Thinh Nguyen, and Bella Bose. *Cross-Domain Lossy Compression via Rate- and Classification-constrained Optimal Transport*. Submitted to ICLR 2026.
- [2] **Nam Nguyen**, Thuan Nguyen, Thinh Nguyen, and Bella Bose. *Universal Rate-Distortion-Classification Representations for Lossy Compression*. IEEE Information Theory Workshop, 2025. [\[PDF\]](#)
- [3] **Nam Nguyen**, Thuan Nguyen, and Thinh Nguyen. *On Minimizing Symbol Error Probability for Antipodal Beamforming in Gaussian MIMO Wiretap Channels*. IEEE Vehicular Technology Conference, 2024. [\[PDF\]](#)

## AWARDS & HONORS

- IEEE Signal Processing Society Scholarship 2025
- NSF Student Travel Grant, AERPAW Spring Workshop – North Carolina State University 2025
- Graduate School's Scholarly Presentation Award – Oregon State University 2024, 2025