

Vinh-Hung (Tommy) Ly

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Education

Columbia University, New York

May 2025

B.A. Computer Science and Statistics

GPA: 3.82/4.0

Selected Coursework: Artificial Intelligence, Probabilistic Machine Learning (PhD), Statistical Analysis of Neural Data (PhD), Bayesian Statistics, Algorithms, Stochastic Processes, Time Series

Royal Melbourne Institute of Technology Vietnam - B. Com

2013

Research Experience

The Mortimer Zuckerman Mind Brain Behavior Institute, New York

Summer 2024 - Present

Research Assistant, Computational Neuroscience Lab

Advisor: Prof. Liam Paninski

- Developed a semi-supervised computer vision pipeline for pose estimation by integrating an Ensemble Kalman Smoother (EKS) with iterative self-training, achieving a 10% improvement over baseline ensemble models.
- Designed novel data augmentation strategies for multi-session neural decoding using adaptive dropout informed by neuron centrality and graph contrastive learning, thereby enhancing model robustness.
- Contributing to a manuscript: "Improving Pose Estimation through Ensemble Kalman Smoothing and Transfer Learning."

Columbia Irving Medical Center, New York

Summer 2023

Research Intern, Program for Mathematical Genomics

Advisor: Prof. Raúl Rabadán

- Developed a hybrid CNN-Transformer deep learning model for chromatin accessibility prediction, processing 115 ATAC-seq datasets, achieving a Pearson correlation of 0.5.

New York Genome Center, New York

Summer 2022

Research Intern, Tech Innovation Lab

Advisor: Prof. Sanja Vicković

- Modified the PySeq2500 package to repurpose an Illumina HiSeq 2500 for automated microscopy.

Industry Experience

Uber Technologies Inc., New York, Singapore & Vietnam

2016 - 2020

Senior Regional Operations Manager

- Designed and implemented a spatial-temporal analysis framework using SQL and Python to identify optimal cross-dispatch opportunities, analyzing 500k+ trips and uncovering market-specific patterns for improved driver utilization.
- Built complex SQL pipelines to calculate incentive burn rates across US/Canada, validating offline analyses with experimental results for enhanced data reliability.

Projects & Honors

Projects: attract-repel embedding (graph embedding for non-transitive relationships), brainsets (neural decoder with adaptive augmentation for brain signal analysis), pseudo-labeler (semi-supervised keypoint detection pipeline in computer vision), atac-rna processing (chromatin accessibility pipeline integrating Convolutional Neural Network and Transformer architectures)

Honors: Cohen Scholar (\$25k), Columbia GS Honor Society (top 76 students, min. GPA 3.8), Dean's List (5 semesters)

Skills & Activities

Technical: Python, Java, C, Linux, PyTorch (GPU acceleration), scikit-learn, Lightning AI, gcloud, AWS, PostgreSQL

Activities: Co-founder of AI@Columbia (600+ member community), Completed Ironman Maryland (14.5 hours)