

Thanh Le

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SUMMARY

Fourth-year Mathematics PhD Candidate, specializing in Probabilistic Combinatorics and Deep Learning. Strong programming background with software engineering and data science experience. Perform well under pressure, take initiative & get tasks done, and focus on details. Seeking careers in Data Science or Quant.

EDUCATION

University of Nebraska-Lincoln, <i>PhD in Mathematics</i>	(GPA = 4.00)	Expected May 2027
University of Nebraska-Lincoln, <i>MS in Mathematics</i>	(GPA = 4.00)	2023
Fairfield University, <i>BS in Computer Science and Mathematics</i>	(GPA = 3.90)	2022

SKILLS & CERTIFICATIONS

- Languages & Framework: Python, MATLAB, C#, Java, Haskell, Mathematica, ASP.NET, LaTeX
- Python Libraries: Pandas, Scikit-learn, NumPy, Matplotlib
- Certifications: Deep Learning ([2025](#)), AI Agents ([2025](#)), Machine Learning ([2023](#)), Trading Basics ([2025](#))

PROJECTS

Transformer Architecture Research – University of Nebraska-Lincoln **Oct. 2024 – current**

- Investigate theoretical capabilities of Transformer to bridge empirical & theoretical understanding.
- Applied probabilistic methods (e.g., Lovasz Local Lemma) and complexity theory techniques to classify model power based on number of Chain-of-Thought steps.
- Developed task-specific Transformers by constraining matrix values; obtained initial theoretical results.

Random Graphs Research – University of Nebraska-Lincoln **Jun. 2024 – current**

- Research on aspects of binomial random graphs: maximum clique detection, Hamiltonicity.
- Applied probabilistic methods (method of moments, large deviation bounds, Markov inequality) and statistical distributions (Poisson, Geometric, Hypergeometric) to rigorously prove properties.
- Designed and analyzed algorithms to find desired structures; used Mathematica to help with analyses.

EEG Memory Analysis by Machine Learning methods – Fairfield University **Jun. 2021 – Jan. 2022**

- Studied EEG time-series data (~600 files, on 20+ human subjects) to predict human's memory (true vs false) and vision.
- Engineered features using frequency/complexity metrics; trained ML classifiers (Random Forest, Naive Bayes...) in scikit-learn.
- Delivered model performance comparisons; presented findings and discussed with team to infer models' outcomes. [[LINK](#)]

Classify cat vs non-cat images – Coursera's Neural Network and Deep Learning Course **Sep. – Nov. 2025**

- Built deep neural network from scratch using Python to classify cat vs non-cat images (>200 images).
- Compared with logistic regression (built from scratch) and found out that deep neural network performed better.

WORK EXPERIENCE

University of Nebraska-Lincoln: Lincoln, Nebraska **Jan. 2025 – current**
Graduate Research Assistant

- Research on pure math and improve theoretical results in Probabilistic Combinatorics and Deep Learning.
- Think independently and collaborate with 4 researchers to solve conjectures; present results in seminars; 2 papers in progress.
- Organize department's research seminar on Discrete Math (Combinatorics, Coding Theory); correspond with outside speakers.

University of Nebraska-Lincoln: Lincoln, Nebraska **Aug. 2022 – Dec. 2024**
Graduate Teaching Assistant

- Taught 3 math courses and 5 recitations (semester-based, ~30 students each) by active learning method.
- Collaborated with teaching team to design lessons, strengthen materials, and ensure consistent grading.

VietESoft JSC: Hanoi, Vietnam **Jun. 2020 – Jan. 2021**
Software Engineer Intern

- Designed and implemented server-side pages, APIs, and SQL databases for 3 websites by ASP.NET Core.
- Collaborated with front-end developers to complete and deliver websites to customers.

AWARDS

Ranked 193 at Putnam Competition	2021
Awarded Third Prize at Vietnam Mathematical Olympiad	2017
Awarded Outstanding Qualifying Exam, UNL Math Department	2023
Awarded Lloyd Jackson Award (based on scholarship), UNL Math Department	2024