Eleanor Quint

eleanorquint1@gmail.com

Research Interest Developing deep neural networks for understanding and controlling complex physical systems. Epistemic uncertainty, safety, and interpretability of reinforcement and deep learning models. Also interested in verification, model-based reinforcement learning, and generative models. Have worked with applications in industrial automation, robotics, computer security, chemistry, materials science, and medicine.

Education

Ph.D. in Computer Science — Fall 2016 - Fall 2025
University of Nebraska-Lincoln, Lincoln, NE
Dissertation: Making Deep Neural Networks Trustworthy: Interpretability and Safety through Symbolic Methods
Advisor: Dr. Stephen Scott

Bachelor of Science, Mathematics and Computer Science — Fall 2012 - Spring 2016
University of Nebraska-Lincoln, Lincoln NE

Work Experience

Research Scientist, Phaidra Inc. — July 2022 - July 2025
Led projects developing and productionizing deep neural network-based systems for physics-based control of complex industrial machinery. Led the development of the safety and constraints framework, and time series prediction using various deep learning and conventional AI techniques.

Research Intern, NASA Glenn Research Center — Summer 2021
Self-Supervised Pre-Training in PyTorch with Materials Science Applications

Research Intern, Microsoft Research — Summer 2019, 2020
Reinforcement Learning in TensorFlow with Security Applications

Teaching Assistant, Computer Science at UNebraska-Lincoln — Fall 2016 - Spring 2022

Research Assistant, Computer Science at UNebraska-Lincoln — Fall 2018 - Spring 2018

Under Review

1. Perturb and Correct: Post-Hoc Ensembles using Affine Redundancy. **Eleanor Quint**. NeurIPS 2026.

Book Chapters

1. A Brief Introduction to Machine Learning and Deep Learning for Computer Vision. **Eleanor Quint**, Stephen Scott. Intelligent Image Analysis for Plant Phenotyping, 2020.

Conference Publications

1. Quantitatively Evaluating the Validity of Contrastive Generators for Recourse. Ian Howell, **Eleanor Quint**, Hongfeng Yu. 2023 IEEE International Conference on Big Data
2. Computing Triangle and Open-Wedge Heavy-Hitters in Large Networks. A. Pavan, **Eleanor Quint**, Stephen Scott, N.V. Vinodchandran. In *2016 IEEE International Conference on Big Data.* Washington D.C., December 2016.
3. Constrained Group Testing to Predict Binding Response of Candidate Compounds. **Eleanor Quint**, Stephen Scott, N.V. Vinodchandran, and Brad Worley. In *2016 SIAM International Conference on Data Mining.* Miami, Florida, May 2016.

Workshop Publications

1. Safe Online Exploration with Nonlinear Constraints. **Eleanor Quint**, Ian Howell, Garrett Wirka, Stephen Scott, Hoang-Dung Tran. NeurIPS 2021 Workshop on Safe and Robust Control of Uncertain Systems. December 2021.
2. Contrastive Attribution with Feature Visualization. **Eleanor Quint**, Garrett Wirka, Stephen Scott, N. V. Vinodchandran, Tao Yao. ICML 2020 Workshop on Extending Explainable AI Beyond Deep Models and Classifiers. Virtual, July 2020.
3. Formal Language Constraints for Markov Decision Processes. **Eleanor Quint**, Dong Xu, Zeynep Hakguder, Haluk Dogan, Stephen Scott, Matthew Dwyer. NeurIPS 2019 Workshop on Safety and Robustness in Decision Making. Vancouver, BC, Canada, December 2019

Mentoring/ Advising

Out in Tech Mentor	Fall 2020
Evan Palmer, Undergraduate student	Spring 2020 - Fall 2020
Ian Howell, PhD student	Summer 2020 - Summer 2022
Samuel Flint, PhD student	Fall 2019 - Fall 2020
Serigne Mortoure, Undergraduate student	Fall 2019 - Fall 2020

Awards

Department:

Outstanding Undergraduate Researcher	2015-2016 Academic Year
Outstanding Graduate Teaching Assistant	2017-2018 Academic Year

Service

IJCAI Reviewer	2018, 2019, 2020
UNL CSE Faculty Search Committee	2021

Teaching

Teaching Assistant:

CSCE 322 Programming Language Concepts	Fall 2016,'17
CSCE 423/823 Design&Analysis of Algorithms	Fall 2015,'19,'20, Spring 2015,'19
CSCE 428/828 Automata, Computation and Formal Languages	Spring 2017,'18
CSCE 486 Computer Science Professional Development	Fall 2016,'17
CSCE 454/854 Human-Robot Interaction	Spring 2019
CSCE 479/879 Introduction to Deep Learning	Spring 2018-20, Fall 2019

Developed significant portion of curriculum including labs
https://github.com/DrKwint/Intro-Deep-Learning-Notebooks

Guest Lecturer:

CSCE 473/873 Computer Vision — Spring 2017
On Deep Learning in Computer Vision

CSCE 457/857 Systems Administration — Fall 2019
On Deep Learning in the Data Center

Informal:

Co-founded machine learning club at UNL	Fall 2016
Co-founded and lead deep learning seminar	Spring 2016 - Spring 2022

References

Christopher Vause	christopher.vause@phaidra.ai
Phaidra VP of Analytics and Observability	
Stephen S. Scott	sscott@cse.unl.edu
Academic Advisor	
Mariusz Jakubowski	mariuszj@microsoft.com
Microsoft Research Internship Advisor	
Jugal Parikh	jugal.parikh@microsoft.com

Microsoft Research Internship Advisor
Joshua Stuckner joshua.stuckner@nasa.gov
NASA Mentor

Deep Learning Libraries and Technologies	TensorFlow, PyTorch, DeepMind Sonnet, OpenAI Gym, Numpy, SciPy, Scikit-learn, Jax/Flax, CUDA
Programming Languages and Technologies	Python, C/C++, Rust, C#, Haskell, Git/Github, TravisCI, Bash/Linux, Slurm, Luigi, Google Cloud Platform, Python Ray framework