Eleanor Quint

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Research Interest Safety and interpretability of reinforcement learning and deep learning models. I'm also interested in verification, model-based reinforcement learning, and generative models. I have worked with applications in computer security, robotics, chemistry, materials science, and medicine.

Education

Ph.D. in Computer Science — Fall 2016 - Present
University of Nebraska-Lincoln, Lincoln, NE
Advisor: Dr. Stephen Scott

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

In Preparation

1. Efficient Importance Sampling of Neural Networks. **Eleanor Quint**

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. 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.
2. **Eleanor Quint**, Stephen Scott, N.V. Vinodchandran, and Brad Worley. Constrained Group Testing to Predict Binding Response of Candidate Compounds. 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 - Present
Ian Howell, PhD student	Summer 2020 - Present
Samuel Flint, PhD student	Fall 2019 - Fall 2020
Serigne Mortoure, Undergraduate student	Fall 2019 - Fall 2020

Work Experience

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 - Present

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

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 Search Committee Member — 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 - Present

References

Stephen S. Scott, Advisor — sscott@cse.unl.edu
Mariusz Jakubowski, Microsoft Research Internship Advisor — mariuszj@microsoft.com
Jugal Parikh, Microsoft Research Internship Advisor — jugal.parikh@microsoft.com
Vinodchandran N. Variyam, co-author — vinod@cse.unl.edu
Joshua Stuckner, NASA Mentor — joshua.stuckner@nasa.gov

Deep Learning Libraries and Technologies

TensorFlow, PyTorch, DeepMind Sonnet, OpenAI Gym, OpenAI Baselines, Numpy, SciPy, Scikit-learn

Programming Languages and Technologies

Python, C/C++, Rust, C, Haskell, Git/Github, TravisCI, Bash/Linux, Slurm, Luigi, Google Cloud Platform