

Education

University of Arizona, Tucson, AZ

Aug. 2022 – Present

Ph.D. in Computer Science

Advisor: Prof. Kwang-Sung Jun

Research: Bandit Algorithms, MCTS, Reinforcement Learning, Machine Learning Theory

University of Oregon, Eugene, OR

Aug. 2019 – June. 2021

M.S. in Computer Science

Advisor: Prof. Thien Huu Nguyen

Research: Domain Adaptation, Unsupervised and Self Learning, Multilingual NLP

CUNY Baruch College, New York, NY

Aug. 2013 – Dec. 2015

B.A. in Finance; minor in Mathematics

Competitions: Top 20 at Traders@MIT Fall 2014 Trading Competition, CUNY Maths Competition

Research Projects

Haver Estimator (plan to submit to NeurIPS 2024)

- Propose a novel maximum estimator, termed Haver, and show that Haver achieves accelerated rates in mean squared error (MSE) across two scenarios fixed and adaptive number of action samples.
- For fixed number of action samples, Haver achieves MSE's upper bound of $\mathcal{O}\left(\frac{1}{K_a N}\right)$ where K_a is number of optimal actions, N is number of action samples.
- For adaptive number of action samples, Haver achieves MSE's upper bound of $\mathcal{O}\left(\frac{1}{\sum_{i \in \mathcal{B}^*} N_i}\right)$, where $\mathcal{B}^* := \{i : \mu_i = \mu_1, N_i \geq \frac{1}{c} N_1\}$, while empirical maximum estimator achieves at least $\mathcal{O}\left(\frac{1}{\sum_{i \in [K]} N_i}\right)$.
- Through empirical studies conducted accross various RL toy games and bandit settings, our Haver estimator consistently outperforms other estimators (e.g., empirical maximum estimator, double estimator, weighted estimator, maxmin estimator).

On stopping time distribution in Best-arm identification (plan to submit to NeurIPS 2024)

- Present a new analysis of the stopping time distribution in Best-arm identification (BAI), proving that while Uniform Sampling achieves a tail bound of $\mathbb{P}(\tau \geq T) \leq \exp\left(-\frac{1}{n\Delta_2^2}\right)$ for some $T \geq T^*$, Doubling Sequential Halving (DSH) achieves a more desired tail bound of $\mathbb{P}(\tau \geq T) \leq \exp\left(-\frac{1}{\Theta(H)}\right)$, where $H = \sum_{i \geq 2} \Delta_i^{-2}$, τ is the stopping time.
- Propose a novel Meta algorithm capable of transforming any BAI algorithm to one that preserves its correctness (accurately outputs the best arm), while also meeting the desired tail bound for stopping time.
- Provide an analysis of the lower bound of the stopping time tail distribution of the LUCB algorithm

Publications

Crosslingual Transfer Learning for Relation and Event Extraction via Word Category and Class Alignments

Minh Van Nguyen, [Tuan Ngo Nguyen](#), Bonan Min, and Thien Huu Nguyen

In Proceedings of the EMNLP 2021

Hierarchical Graph Convolutional Networks for Jointly Resolving Cross-Document Coreference of Entity and Event Mentions

Duy Phung, [Tuan Ngo Nguyen](#), and Thien Huu Nguyen

In Proceedings of the NAACL-HLT TextGraphs Workshop 2021

Event Detection: Gate Diversity and Syntactic Importance Scores for Graph Convolution Neural Networks

Viet Dac Lai, [Tuan Ngo Nguyen](#), and Thien Huu Nguyen

In Proceedings of the EMNLP 2020

Graph Transformer Networks with Syntactic and Semantic Structures for Event Argument Extraction

Amir Pouran Ben Veyseh, [Tuan Ngo Nguyen](#), and Thien Huu Nguyen

Academic Services

Reviewer: ACL (2022), EMNLP (2021), CVPR (2021), IJCAI (2021)

Teaching Assistant: CSC445 Design and Analysis of Algorithms, CSC380 Principles of Data Science

Technical Skills

Machine Learning: Bandits Algorithms, Reinforcement Learning, ML Theory, Concentration Measures, Probabilistic Models, Generative Models, Unsupervised and Representation Learning, Domain Adaptation, Adversarial ML, Natural Language Processing, Computer Vision

Languages: Python, C/C++, Julia, Pytorch/Tensorflows; **Editor:** Emacs