MINH PHAM

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EDUCATION

New York University, Brooklyn, NY 2021 - Present
Ph.D. in Computer Science
Advisor: Dr. Chinmay Hegde

Worcester Polytechnic Institute, Worcester, MA 2014 - 2017
B.S. in Computer Science & B.S. in Mathematical Sciences
Advisor: Dr. Jacob Whitehill

EXPERIENCE

Research Assistant Sep, 2021 - Present
New York University *Brooklyn, NY*

- Research topics: Robustness, Continual Learning, Zero-shot Learning
- Re-examined theories of (self) distillation to provide conflicting examples, proposed a new explanation using loss landscape geometry, and studied transferred properties of knowledge distillation.
- Proposed a training-free and modified smoothing approach, Smooth-Reduce. Achieved state-of-the-art certified accuracies on ImageNet and CIFAR-10, and meaningful results on UCF-101 video dataset.

Research Assistant May, 2019 - May, 2021
Worcester Polytechnic Institute *Worcester, MA*

- Research topics: Dataset Evaluation, Speaker Verification/Diarization.
- Published one of the largest public speech datasets, BookTubeSpeech, containing 8,500 speakers.
- Studied how label noise affects the accuracy of embedding models for speaker verification.

PUBLICATIONS & PREPRINTS

(*) denotes equal contribution

Pham, M.*, Cho, M.*, Joshi, A.* and Hegde, C. "Revisiting Self-Distillation", 2022

M., Joshi, **Pham, M.**, Cho, A. and Hegde, C. "Smooth-Reduce: Leveraging Patches for Improved Certified Robustness", 2022

Pham, M., Li, Z. and Whitehill, J. "Toward Speaker Embeddings: Automated Collection of Speech Samples from Unknown Distinct Speakers". *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2020*

Pham, M., Li, Z. and Whitehill, J. "How Does Label Noise Affect the Quality of Speaker Embeddings?". *Conference of the International Speech Communication Association (INTERSPEECH), 2020*

COURSES

Algorithmic Machine Learning & Data Science *CS-GY.6763*, Computer Vision *CSCI-GA.2271*, Foundations of Machine Learning *CSCI-GA.2566*, *Foundations of Deep Learning CS-GY.9963*, Information Visualization *CS-GY.6313*, Mathematical Statistics *DS-GA.1020*.

AWARDS & ACTIVITIES

NYU SOE Ph.D. Fellowship — Sep, 2021 - Dec, 2021
WPI University & International Scholarship — 2017 - 2021
Google CSRMP — Oct, 2021 - Dec, 2021
Poster Presentation, WPI Works in Progress Undergraduate Research Symposium — Oct, 2019
Poster Presentation, "Toward Speaker Embeddings: Automated Collection of Speech Samples from Unknown Distinct Speakers", ICASSP 2020 — May, 2020
Poster Presentation, "How Does Label Noise Affect the Quality of Speaker Embeddings?", INTERSPEECH 2020 — Oct, 2020

SKILLS

Programming Skills Python, Java, C++, SQL, R
Technologies PyTorch, Tensorflow, Google Cloud, AWS, Git, Slurm

COURSE PROJECTS

A Fairness Metric for Equality of Resources: Efficiently Computing Stability
Lucas Rosenblat, Minh Pham

- Defined a new fairness metric called Stability, and proposed a randomized algorithm to calculate the proposed metric efficiently.
- Provided a theoretical analysis of the proposed randomized algorithm, and comparison with existing group/individual fairness metrics.

Machine Unlearning: A Survey
Feyza Duman, Anubhav Jain, Minh Pham

- Wrote a survey paper on unlearning algorithms for classical machine learning and deep learning.