Xiangchi Yuan

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Education

Brandeis University — Waltham, MA, USA
M.S.in Computer Science — *Aug. 2022 – May 2024*

University of Electronic Science and Technology of China (UESTC) — Chengdu, Sichuan, CN
B.Eng. in Electronic and Information Engineering, Major GPA 3.82 — *Aug. 2018 – May 2022*

Research Interests

Trustworthy ML, Data-centric AI, Natural Language Processing.

Papers

[3] **Xiangchi Yuan**, Yijun Tian, Chunhui Zhang, Nitesh V Chawla, and Chuxu Zhang. Graph Mixed Supervised Learning via Lipschitz Bounded Mixture-of-Experts Similarity Network. In submission.

[2] **Xiangchi Yuan**, Chunhui Zhang, Yijun Tian, and Chuxu Zhang. Navigating Graph Robust Learning against All-Intensity Attacks. In submission. Previous version in Fortieth International Conference on Machine Learning (ICML) 2023-New Frontiers in Adversarial Machine Learning Workshop *(ICML 2023 AdvML-Frontiers Workshop)*.

[1] Lang Qin, Yuntao Xie, Xinwen Liu, **Xiangchi Yuan**, and Huan Wang. An End-to-End 12-Leading Electrocardiogram Diagnosis System Based on Deformable Convolutional Neural Network With Good Antinoise Ability. In IEEE Transactions on Instrumentation and Measurement *(IEEE TIM 2021)* .

Research Experience

Dardmouth College — Sep. 2023 – Present
Research Assistant — *Remote*

- Designed Retreve Augmented Automatic Prompt Engineer for conditional context generation by LLMs.

University of Notre Dame — Jan. 2023 – Aug. 2023
Research Assistant, advised by Prof. Nitesh V. Chawla — *Remote*

- Introduced a new problem, Graph Mixed Supervised Learning, that describes the need to model new nodes with novel classes and potential label noises.
- Designed a node similarity network to capture the knowledge from the original classes, aiming to obtain insights for the emerging novel classes to weight the training loss of new class nodes with label noises.
- To enhance the similarity network's generalization, we employed the Mixture-of-Experts and introduced the Lipschitz bound to stabilize MoE model output, with a theoretical guarantee.

Brandeis University — Sep. 2022 – Jan. 2023
Research Assistant, advised by Prof. Chuxu Zhang — *Waltham, MA, USA*

- Proposed Denoise Masked Graph Auto-encoder to remove malicious edges of the attacked graph.
- Revealed the connection between differential privacy (DP) and GNN robustness, and applied the idea of differential privacy to GNN to improve the robustness.
- Introduced the mixture-of-experts model to the GNN layer to select the better DP experts against attacks.
- Provided a theoretical robust guarantee for the designed Differential Privacy Mixture-of-Experts module.

University of Electronic Science and Technology of China — Sep. 2020 – Feb. 2021
Undergraduate Research Assistant — *Chengdu, Sichuan, CN*

- Designed Deformable Convolutional Neural Network With Good Antinoise Ability for ECG classification
- Classified different ECG signals for diagnosis with employing Tri-net combined Tri-training

Work Experience

Brandeis University Aug. 2023 – Present
Teaching Assistant *Waltham, MA, USA*

- Head TA for MATH-125A Mathematics for Machine Learning.

VeriSilicon Microelectronics, GPU Arch Group Apr. 2022 – Jul. 2022
Software Development Engineer Intern *Chengdu, Sichuan, CN*

- Designed HDR adaptive curve fitting algorithm: meeting hardware requirements and keeping high precision.
- Implemented CCM gamut mapping which suits hardware with fixed-point calculation for different Gamut settings.
- This SoC IP was used in **Google Pixel**.

Awards

UESTC University-wide Outstanding Student Scholarship	Nov. 2020, Nov. 2021
Brandeis University Conference Award	Jul. 2023
Brandeis University GSAS Fellowship ($ 40,000)	Aug. 2022- May. 2024

Services

The Web Conference (WWW) 2023	*reviewer*
The International Conference on Machine Learning (ICML) 2023	*reviewer*
The International Conference on Learning Representations (ICLR) 2024	*reviewer*
IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2024	*reviewer*