Xingchen Zhao

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Education

Northeastern University   **Aug. 2021 – Present**
Ph.D. in Computer Engineering (Advisor: Prof. Yun Raymond Fu)   *Boston, MA*

University of Pittsburgh   **Jan. 2018 – May. 2021**
B.S. in Computer Science   *Pittsburgh, PA*

Research Interests

Main: Machine Learning, Computer Vision, Medical Imaging Analysis
Specific: Transfer Learning, Domain Generalization/Adaptation, Out-of-Distribution Generalization, Multi-task Learning, Adversarial Learning, Performance Guarantees, Image Segmentation, Object Detection

Preprints

- **Xingchen Zhao**, Xuehai He, Pengtao Xie, "Learning by Ignoring, with Application to Domain Adaptation", arXiv preprint 2012.14288, 2021.
- Anthony Sicilia, **Xingchen Zhao**, Seong Jae Hwang, "Domain Adversarial Neural Networks for Domain Generalization: When It Works and How to Improve", arXiv preprint 2102.03924, 2021.

Publications

- Anthony Sicilia, **Xingchen Zhao**, Anastasia Sosnovskikh, Seong Jae Hwang, "PAC Bayesian Performance Guarantees for (Stochastic) Deep Networks in Medical Imaging", Medical Image Computing and Computer Assisted Intervention (MICCAI), 2021.
- **Xingchen Zhao**, Anthony Sicilia, Davneet Minhas, Erin O'Connor, Howard Aizenstein, William Klunk, Dana Tudorascu, Seong Jae Hwang, "Robust White Matter Hyperintensity Segmentation on Unseen Domain", International Symposium on Biomedical Imaging (ISBI), 2021.
- Anthony Sicilia, **Xingchen Zhao**, Davneet Minhas, Erin O'Connor, Howard Aizenstein, William Klunk, Dana Tudorascu, Seong Jae Hwang, "Multi-Domain Learning by Meta-Learning: Taking Optimal Steps in Multi-Domain Loss Landscapes by Inner-Loop Learning", International Symposium on Biomedical Imaging (ISBI), 2021.

Experience

Graduate Research Assistant   **Aug. 2021 – Present**
Northeastern University   *Boston, MA*

- Research Areas: Transfer Learning, Domain Generalization/Adaptation, Adversarial Learning, Video Modeling.
- Advisor: Prof. Yun Raymond Fu

Undergraduate Research Assistant   **Jan. 2020 – Jun. 2021**
University of Pittsburgh   *Pittsburgh, PA*

- Research Areas: Computer Vision and Medical Image Segmentation with a focus on Transfer Learning (e.g., Domain Generalization, Domain Adaptation), Performance Guarantees.
- Advisor: Prof. Seong Jae Hwang

Research Intern   **Nov. 2020 – Mar. 2021**
University of California, San Diego   *Remote*

- Research Project: Machine Learning Inspired by Humans' Learning Skills
- Proposed and implemented the **Learning by Ignoring (LBI)**, which identifies less important data and excludes through a three-level optimization framework.
- Advisor: Prof. Pengtao Xie

Data Manager Intern   **Jun. 2019 – May 2020**
PittsciVelo   *Pittsburgh, PA*

- Led the development of sciVelo Salesforce database to track innovation portfolio outcomes such as over 150 projects funding, licensing, intellectual property filing, etc.
- Built dashboards and designed reporting workflow for illustrating outcomes led by the team.
- Our database implementation was selected to be expanded across the campus.

Teaching Assistant   **Aug. 2018 – May 2019**
University of Pittsburgh   *Pittsburgh, PA*

- Instructed labs for "Intermediate Programming Using Java."
- Planned lessons, led discussion sections, held office hours, and graded quizzes and assignments.

Technical Skills

Proficiency: Python, PyTorch, Java, Shell, MATLAB, Git, LaTex, Git
Familiarity: C, R, SQL, Swift, TensorFlow, Docker, Linux, JavaScript, HTML&CSS, React, Node.js, MongoDB, JUnit

Other Projects

Visual Storytelling with Generated Stick Figures | *PyTorch* | [Link]   **2020**
- Proposed and implemented a stacked generative adversarial network to randomly creat a sequence of moving stick figures that tell stories through their body interactions.

DevExchange | *MongoDB, Express, React, Node.js* | [Link]   **2019**
- Developed an in-depth full stack social network web application for developers using MongoDB, Express, React, Node.js, Redux.

PittSocial | *Java, PostgreSQL* | [Link]   **2019**
- Implemented a Java, JDBC and PostgreSQL application program that will operate PittSocial, a Social Networking System (database application) for the University of Pittsburgh.

Quantitative Financial Analysis | *R* | [Link]   **2019**
- Used R to retrieve, explore and analyze the data of stock, and visualize the stock performance by comparing traditional industrial with non-traditional industrial. Collected data of numerous stocks and created the portfolio optimization.

Awards

- **Undergraduate Research Scholars Award for Summer 2020** - School of Computing and Information (SCI), University of Pittsburgh
- **Dean's List 2018 − 2021** - University of Pittsburgh

Services

Reviewer

- **IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)**
- **International Conference on Learning Representations (ICLR)**
- **Association for the Advancement of Artificial Intelligence (AAAI)**