Sheng Li

Quantitative Foundation Associate Professor
School of Data Science, University of Virginia
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RESEARCH INTERESTS

- **Generative Artificial Intelligence:** Large Multimodal Models, Large Language Models, Diffusion Models, and Transformers.
- **Trustworthy Artificial Intelligence:** Robustness, Fairness, Safety, Causality, Explainability, and Transferability.
- **Machine Learning for Causal Inference:** Complex Treatments, Causal Inference on Graphs, and Counterfactual Inference.
- **AI for Science, Health, and Education:** Trustworthy AI for Educational Assessment, Public Health, Biomedical Science, and Environmental Science.

EDUCATION

Northeastern University Boston, MA, USA
Ph.D. in Computer Engineering 09/2012 - 05/2017
Thesis: "Robust Data Representations for Visual Learning"
Advisor: Professor Yun Raymond Fu

Nanjing University of Posts and Telecommunications (NUPT) Nanjing, China
M.Eng. in Information Security 09/2010 - 07/2012
Thesis: "Divide and Conquer based Discrimination Feature Extraction and Its Application"

Nanjing University of Posts and Telecommunications (NUPT) Nanjing, China
B.Eng. in Computer Science and Engineering 09/2006 - 07/2010
Thesis: "Kernel DCT Discriminant Analysis for Face Recognition"

PROFESSIONAL EXPERIENCE

- **Quantitative Foundation Associate Professor (with Tenure)** 02/2024 - *Present*
  School of Data Science
  Dept. Computer Science, School of Engineering and Applied Science (by courtesy)
  University of Virginia (UVA), Charlottesville, VA
- **Associate Professor (with Tenure)** 08/2023 - 02/2024
  School of Data Science
  University of Virginia (UVA), Charlottesville, VA
- **Assistant Professor** 07/2022 - 08/2023
  School of Data Science
  University of Virginia (UVA), Charlottesville, VA
- **Adjunct Assistant Professor** 07/2022 - *Present*
  School of Computing
  University of Georgia (UGA), Athens, GA
- **Assistant Professor** 08/2018 - 07/2022
  School of Computing
  University of Georgia (UGA), Athens, GA
- **Faculty Fellow** 08/2018 - 07/2022
  Institute for Artificial Intelligence
  University of Georgia (UGA), Athens, GA
- **Courtesy Faculty** 03/2021 - 07/2022
  Institute of Bioinformatics
  University of Georgia (UGA), Athens, GA
- **Data Scientist** 06/2017 - 07/2018
  BigData Experience Lab
  Adobe Research, San Jose, CA

- **Research Assistant** 08/2012 - 05/2017
  Department of Electrical and Computer Engineering
  Northeastern University (NEU), Boston, MA
  Advisor: Prof. Yun Raymond Fu
- **Data Scientist Intern** 05/2015 - 08/2015
  Adobe Research, San Jose, CA
  Mentors: Dr. Nikos Vlassis, Dr. Jaya Kawale
- **Data Scientist Intern** 05/2014 - 08/2014
  Adobe Research, San Jose, CA
  Mentor: Dr. Jaya Kawale

HONORS & AWARDS

- Research Communications Fellow 2024
  University of Virginia
- Outstanding Researcher 2023
  University of Virginia
- Georgia CTSA President's Award for Team Science 2023
  Georgia Clinical and Translational Science Alliance
- DARPA AI Forward 2023
  Among 100 participants selected from 700+ applicants
- Adobe Data Science Research Award 2022
- Fred C. Davidson Early Career Scholar Award 2022
  University of Georgia
- Best Associate Editor Award 2022
  IEEE Transactions on Circuits System for Video Technology
- Faculty Teaching Excellence Award 2021
  Department of Computer Science, University of Georgia
- **Best-Ranked Papers** of ICDM 2021
  IEEE International Conference on Data Mining (ICDM)
- **Top Papers** of ICME 2021
  IEEE International Conference on Multimedia Expo (ICME)
- Aharon Katzir Young Investigator Award 2020
  International Neural Network Society (INNS)
- M. G. Michael Award 2020
  University of Georgia
- Faculty Research Excellence Award 2020
  Department of Computer Science, University of Georgia
- Adobe Data Science Research Award 2019
- Senior Member, IEEE 2019
- **Best Paper Award** (1 out of 389 submissions) 2014
  SIAM International Conf. Data Mining (SDM)
- **Best Paper Award Candidate** (4 out of 716 submissions) 2014
  IEEE International Conf. Multimedia Expo (ICME)
- **Best Student Paper Honorable Mention Award** 2013
  IEEE International Conf. Automatic Face and Gesture Recognition (FG)
- Baidu Research Fellowship 2016
- Chinese Government Award for Outstanding Self-Financed Students Abroad 2015
  Chinese Government
- Outstanding Graduate Student Award 2015
  Highest honor for graduate students, *Northeastern University*

- The inaugural Adobe Research Fellowship Finalist 2015
- The 8th National Post-Graduate Mathematical Contest in Modeling *(Second Prize)* 2011
  Ministry of Education, China
- The 7th National Post-Graduate Mathematical Contest in Modeling *(Second Prize)* 2010
  Ministry of Education, China
- Outstanding Graduate Student, *NUPT* 2011
- Huawei Scholarship, *NUPT* 2011
- Excellent Bachelor's Thesis Award in Jiangsu Province *The Second Prize* 2010
- Research and Innovation Award, *NUPT* 2009
- The Jiangsu Province Government Scholarship, *Jiangsu Province* 2006
- Conference Travel Awards
  - ◊ SDM Travel Award 2022
  - ◊ SIGIR Student Travel Award 2016
  - ◊ KDD Student Travel Award 2016
  - ◊ CVPR Student Travel Award 2016
  - ◊ IJCAI Student Travel Award 2016
  - ◊ CIKM Student Travel Award 2015
  - ◊ ICDM Student Travel Award 2014
  - ◊ SDM Student Travel Award 2014

CONFERENCE TUTORIALS

- Yaochen Zhu, Yinhan He, Jing Ma, Mengxuan Hu, **Sheng Li**, and Jundong Li. "Causal Inference with Latent Variables: Recent Advances and Future Prospectives." *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**)*, 2024.
- Ronghang Zhu, Xiang Yu, and **Sheng Li**, "Recent Advances in Visual Domain Adaptation and Generalization", *IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2023.
  `https://vdadg.github.io/`
- Zhixuan Chu, Jing Ma, Jundong Li, and **Sheng Li**, "Machine Learning for Causal Inference", *The Thirty-Fourth AAAI Conference on Artificial Intelligence (**AAAI**)*, 2023.
  `https://aaai23causalinference.github.io/`
- **Sheng Li**, Liuyi Yao, Yaliang Li, Zhixuan Chu, Jing Gao and Aidong Zhang, "Machine Learning Meets Causal Inference", *The 26th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**)*, 2020.
- **Sheng Li**, Liuyi Yao, Yaliang Li, Jing Gao and Aidong Zhang, "Representation Learning for Causal Inference", *The Thirty-Fourth AAAI Conference on Artificial Intelligence (**AAAI**)*, 2020.
- **Sheng Li** and Yun Fu, "Low-Rank and Sparse Modeling for Data Analytics", *International Joint Conference on Artificial Intelligence (**IJCAI**)*, 2016.
- **Sheng Li**, Yun Fu, Zhouchen Lin, Rene Vidal, Ehsan Elhamifar, and Jiashi Feng, "Low-Rank and Sparse Modeling for Visual Analytics", *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2016.

PUBLICATIONS ***Citations: 9,100+; H-index: 51, i10-index: 148*** (Google Scholar, July 2025)

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- Books

[B2] **Sheng Li** and Zhixuan Chu. *Machine Learning for Causal Inference*, Springer, 2023.

[B1] **Sheng Li** and Yun Fu. *Robust Representations for Data Analytics*, Springer, 2017.
Views & Downloads: 10,000+
DOI: `https://doi.org/10.1007/978-3-319-60176-2`

- **Conference Papers**

[C1] Dongliang Guo*, Mengxuan Hu*, Zihan Guan, Thomas Hartvigsen, and **Sheng Li**. "BalancEdit: Dynamically Balancing the Generality-Locality Trade-off in Multi-modal Model Editing." *The Forty-Second International Conference on Machine Learning (**ICML**)*, 2025. (* indicates equal contribution)

[C2] Zihan Guan*, Mengxuan Hu*, Ronghang Zhu, **Sheng Li**, and Anil Vullikanti. "Benign Samples Matter! Fine-tuning On Outlier Benign Samples Severely Breaks Safety." *The Forty-Second International Conference on Machine Learning (**ICML**)*, 2025. (Spotlight; * indicates equal contribution)

[C3] Guangya Wan, Yuqi Wu, Hao Wang, Shengming Zhao, Jie Chen, and **Sheng Li**. "Derailer-Rerailer: Adaptive Verification for Efficient and Reliable Language Model Reasoning." *Findings of Annual Meeting of the Association for Computational Linguistics (**ACL**)*, 2025.

[C4] Guangya Wan, Yunsheng Lu, Yuqi Wu, Mengxuan Hu, and **Sheng Li**. "Large Language Models in Causal Discovery: Current Landscape and Future Directions." *The 29th International Joint Conference on Artificial Intelligence (**IJCAI**)*, 2025. (Survey Track)

[C5] Daiqing Qi, Handong Zhao, Jing Shi, Simon Jenni, Yifei Fan, Franck Dernoncourt, Scott Cohen, and **Sheng Li**. "The Photographer's Eye: Teaching Multimodal Large Language Models to See, Think and Critique Like Photographers." *The IEEE / CVF Computer Vision and Pattern Recognition Conference (**CVPR**)*, 2025.

[C6] Ronghang Zhu, Mengxuan Hu, Weiming Zhuang, Lingjuan Lyu, Xiang Yu, and **Sheng Li**. "Revisiting Source-Free Domain Adaptation: Insights into Representativeness, Generalization, and Diversity." *The IEEE / CVF Computer Vision and Pattern Recognition Conference (**CVPR**)*, 2025.

[C7] Lehan Yang, Lu Qi, Xiangtai Li, **Sheng Li**, Varun Jampani, and Ming-Hsuan Yang. "Unified Dense Prediction of Video Diffusion." *The IEEE / CVF Computer Vision and Pattern Recognition Conference (**CVPR**)*, 2025.

[C8] Guangya Wan, Yuqi Wu, Jie Chen, and **Sheng Li**. "RASC: Reasoning-Aware Self-Consistency for Efficient and Faithful LLM Reasoning." *The Annual Conference of the Nations of the Americas Chapter of the ACL (**NAACL**)*, 2025.

[C9] Mengxuan Hu*, Zihan Guan*, Yi Zeng, Junfeng Guo, Zhongliang Zhou, Jielu Zhang, Ruoxi Jia, Anil Kumar Vullikanti, and **Sheng Li**. "Mind Control through Causal Inference: Predicting Clean Images from Poisoned Data." *International Conference on Learning Representations (**ICLR**)*, 2025. (* indicates equal contribution)

[C10] **Sheng Li**. "Trustworthy AI Meets Educational Assessment: Challenges and Opportunities." *The 39th Annual AAAI Conference on Artificial Intelligence (**AAAI**)*, 2025. (Senior Member Track)

[C11] Zihan Guan*, Mengxuan Hu*, **Sheng Li**, and Anil Kumar Vullikanti. "UFID: A Unified Framework for Black-box Input-level Backdoor Detection on Diffusion Models." *The 39th Annual AAAI Conference on Artificial Intelligence (**AAAI**)*, 2025. (AI Alignment Track; * indicates equal contribution)

[C12] Dongliang Guo, Handong Zhao, Ryan Rossi, Sungchul Kim, Nedim Lipka, Tong Yu, and **Sheng Li**. "Few-shot Fine-grained Image Classification with Interpretable Prompt Learning through Distribution Alignment." *The 27th ACM International Conference on Multimodal Interaction (**ICMI**)*, 2025.

[C13] Mei Yang, Dongliang Guo, **Sheng Li**, Steven Binder, Cole Sterck, and Mable Fok. "Motion Reconstruction of an Inchworm Inspired Soft Robotic Climber Using Fiber Optic Sensors and Neural Network." *Optical Fiber Communications (**OFC**) Conference*, 2025.

[C14] Zhanwen Chen, Tianchun Wang, Yizhou Wang, Michal Kosinski, Xiang Zhang, Yun Fu, and **Sheng Li**. "Through the Theory of Mind's Eye: Reading Minds with Multimodal Video Large Language Models." *International Joint Conference on Neural Networks (**IJCNN**)*, 2025.

[C15] Daiqing Qi, Handong Zhao, and **Sheng Li**. "Easy Regional Contrastive Learning of Expressive Visual Fashion Representations", *The Thirty-Eighth Annual Conference on Neural Information Processing Systems (**NeurIPS**)*, 2024.

[C16] Daiqing Qi, Handong Zhao, Aidong Zhang, and **Sheng Li**. "Generalizing to Unseen Domains via Text-guided Augmentation: A Training-free Approach", *European Conference on Computer Vision (**ECCV**)*, 2024.

[C17] Daiqing Qi, , Handong Zhao, Zijun Wei, and **Sheng Li**. "Tag-grounded Visual Instruction Tuning with Retrieval Augmentation", *The Conference on Empirical Methods in Natural Language Processing (**EMNLP**)*, 2024.

[C18] Yu Wang, Ronghang Zhu, Pengsheng Ji, and **Sheng Li**. "Open-Set Graph Domain Adaptation via Separate Domain Alignment." *The 38th Annual AAAI Conference on Artificial Intelligence (**AAAI**)*, 2024.

[C19] Zhixuan Chu, Mengxuan Hu, Qing Cui, Longfei Li, and **Sheng Li**. "Task-Driven Causal Feature Distillation: Towards Trustworthy Risk Prediction." *The 38th Annual AAAI Conference on Artificial Intelligence (**AAAI**)*, 2024.

[C20] Yan Wang, Zhixuan Chu, Xin Ouyang, Simeng Wang, Hongyan Hao, Yue Shen, Jinjie Gu, Siqiao Xue, James Zhang, Qing Cui, Longfei Li, Jun Zhou, and **Sheng Li**. LLMRG: Improving Recommendations through Large Language Model Reasoning Graphs. *The 38th Annual AAAI Conference on Artificial Intelligence (**AAAI**)*, 2024.

[C21] Zihan Guan, Mengxuan Hu, Zhongliang Zhou, Jielu Zhang, **Sheng Li**, and Ninghao Liu. "BadSAM: Exploring Security Vulnerabilities of SAM via Backdoor Attacks (Student Abstract)." *The 38th Annual AAAI Conference on Artificial Intelligence (**AAAI**)*, 2024.

[C22] Yaochen Zhu, Yinhan He, Jing Ma, Mengxuan Hu, **Sheng Li**, and Jundong Li. "Causal Inference with Latent Variables: Recent Advances and Future Prospectives." *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**)*, 2024. (Tutorial Track & Survey Paper).

[C23] Dongliang Guo, Yun Fu, and **Sheng Li**. "Ada-VAD: Domain Adaptable Video Anomaly Detection". *SIAM International Conference on Data Mining (**SDM**)*, 2024.

[C24] Zhongliang Zhou, Jielu Zhang, Zihan Guan, Mengxuan Hu, Ni Lao, Lan Mu, **Sheng Li**, and Gengchen Mai. "Img2Loc: revisiting image localization using multi-modality foundation models and Image-based Retrieval-Augmented Generation." (Demo Paper) *The 47th International ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR**)*, 2024.

[C25] Jielu Zhang, Zhongliang Zhou, Gengchen Mai, Mengxuan Hu, Zihan Guan, **Sheng Li**, and Lan Mu. "Text2Seg: Zero-shot Remote Sensing Image Semantic Segmentation via Text-Guided Visual Foundation Models." *The 7th ACM SIGSPATIAL International Workshop on AI for Geographic Knowledge Discovery (**GeoAI**)*, 2024.

[C26] Dongliang Guo, Zhixuan Chu, **Sheng Li**. "Fair Attribute Completion on Graph with Missing Attributes." *International Conference on Learning Representations (**ICLR**)*, 2023.

[C27] Daiqing Qi, Handong Zhao, and **Sheng Li**. "Better Generative Replay for Continual Federated Learning." *International Conference on Learning Representations (**ICLR**)*, 2023.

[C28] Ronghang Zhu, Xiang Yu, and **Sheng Li**. "Progressive Mix-Up for Few-Shot Supervised Multi-Source Domain Transfer." *International Conference on Learning Representations (**ICLR**)*, 2023.

[C29] Zhaiming Shen, Ming-Jun Lai, **Sheng Li**. "Graph-based Semi-supervised Local Clustering with Few Labeled Nodes." *The 32nd International Joint Conference on Artificial Intelligence (**IJCAI**)*, 2023. (Acceptance Rate: 15%)

[C30] Yunyi Zhou, Zhixuan Chu, Yijia Ruan, Ge Jin, Yuchen Huang, and **Sheng Li**. "pTSE: A Multi-model Ensemble Method for Probabilistic Time Series Forecasting." *The 32nd International Joint Conference on Artificial Intelligence (**IJCAI**)*, 2023. (Acceptance Rate: 15%)

[C31] Yitian Zhang, Yue Bai, Chang Liu, Huan Wang, **Sheng Li**, and Yun Fu. "Frame Flexible Network." *IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2023.

[C32] Zhixuan Chu, Ruopeng Li, Stephen Rathbun, and **Sheng Li**. "Continual Causal Inference with Incremental Observational Data." *The 39th IEEE International Conference on Data Engineering (**ICDE**)*, 2023.

[C33] Saed Rezayi, Handong Zhao, Ronghang Zhu, and **Sheng Li**. "XDC: Adaptive Cross Domain Short Text Clustering." *SIAM International Conference on Data Mining (**SDM**)*, 2023.

[C34] Zhixuan Chu, Mechelle Claridy, Jose Cordero, **Sheng Li**, and Stephen Rathbun. "Estimating Propensity Scores with Deep Adaptive Variable Selection." *SIAM International Conference on Data Mining (**SDM**)*, 2023.

[C35] **Sheng Li**. "Towards Trustworthy Representation Learning." *SIAM International Conference on Data Mining (**SDM**)* (Blue Sky Idea Track), 2023.

[C36] Weili Shi, Xueying Yang, Xujiang Zhao, Haifeng Chen, Zhiqiang Tao, and **Sheng Li**. "Calibrate Graph Neural Networks under Out-of-Distribution Nodes via Deep Q-learning." *The 32nd ACM International Conference on Information and Knowledge Management (**CIKM**)*, 2023.

[C37] Zhixuan Chu and **Sheng Li**. "Continual Causal Inference: Challenges and Opportunities." *The Thirty-Seventh AAAI Conference on Artificial Intelligence (**AAAI**)* (Bridge Program - Continual Causality), 2023

[C38] Zhanwen Chen, Saed Rezayi, **Sheng Li**. "More Knowledge, Less Bias: Unbiasing Scene Graph Generation with Explicit Ontological Adjustment." *IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**)*, 2023.

[C39] Hemadri Jayalath, Ghadeer Yassin, Lakshmish Ramaswamy, and **Sheng Li**. "Continual Optimization of In-Production Machine Learning Systems through Semantic Analysis of User Feedback." *The 15th International Conference on Agents and Artificial Intelligence (**ICAART**)*, 2023.

[C40] Weili Shi, Zhongliang Zhou, Ben Letcher, Nathaniel Hitt, Yoichiro Kanno, Ryo Futamura, Osamu Kishida, Kentar Morita, and **Sheng Li**. "Aging Contrast: A Contrastive Learning Framework for Fish Re-identification Across Seasons and Years". *The 36th Australasian Joint Conference on Artificial Intelligence (**AJCAI**)*, 2023.

[C41] Wenxiong Liao, Zhengliang Liu, Yiyang Zhang, Xiaoke Huang, Fei Qi, Siqi Ding, Hui Ren, Zihao Wu, Haixing Dai, **Sheng Li**, Lingfei Wu, Ninghao Liu, Quanzheng Li, Tianming Liu, Xiang Li, and Hongmin Cai. "Coarse-to-fine Knowledge Graph Domain Adaptation based on Distantly-supervised Iterative Training". *IEEE International Conference on Bioinformatics and Biomedicine. (**BIBM**)*, 2023.

[C42] Weili Shi, Ronghang Zhu, and **Sheng Li**. "Pairwise Adversarial Training for Unsupervised Class-imbalanced Domain Adaptation." *The 28th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**)*, pp. 1598-1606, 2022. (Acceptance Rate: 15%) [Views & Downloads: 88]
DOI: https://doi.org/10.1145/3534678.3539243

[C43] Ronghang Zhu and **Sheng Li**. "CrossMatch: Cross-Classifier Consistency Regularization for Open-Set Single Domain Generalization." *International Conference on Learning Representations (**ICLR**)*, 2022. (Acceptance Rate: 28%)

[C44] Saed Rezayi, Zhengliang Liu, Zihao Wu, Chandra Dhakal, Bao Ge, Chen Zhen, Tianming Liu, and **Sheng Li**. "AgriBERT: Knowledge-Infused Agricultural Language Models for Matching Food and Nutrition." *The 31st International Joint Conference on Artificial Intelligence (**IJCAI**)*, pp. 5150-5156, 2022. (Acceptance Rate: 15%)
DOI: https://doi.org/10.24963/ijcai.2022/715

[C45] Ronghang Zhu and **Sheng Li**. "Self-supervision based Semantic Alignment for Unsupervised Domain Adaptation." *SIAM International Conference on Data Mining (**SDM**)*, pp. 1-9, 2022. (Acceptance Rate: 26%)
DOI: https://doi.org/10.1137/1.9781611977172.1

[C46] Zhixuan Chu, Stephen Rathbun, and **Sheng Li**. "Learning Infomax and Domain-Independent Representations for Causal Effect Inference with Observational Data." *SIAM International Conference on Data Mining (**SDM**)*, pp. 433-441, 2022. (Acceptance Rate: 26%)
DOI: https://doi.org/10.1137/1.9781611977172.49

[C47] Yue Bai, Zhiqiang Tao, Lichen Wang, **Sheng Li**, Yu Yin, and Yun Fu. "Collaborative Attention Mechanism for Multi-Modal Time Series Classification." *SIAM International Conference on Data Mining (**SDM**)*, pp. 495-503, 2022. (Acceptance Rate: 26%)
DOI: https://doi.org/10.1137/1.9781611977172.56

[C48] Saed Rezayi, Handong Zhao and **Sheng Li**. "XDC: Adversarial Adaptive Cross Domain Face Clustering (Student Abstract)." *The Thirty-Sixth AAAI Conference on Artificial Intelligence (**AAAI**)*, 36(11):13035-13036, 2022.
DOI: https://doi.org/10.1609/aaai.v36i11.21654

[C49] Zhixuan Chu, Stephen Rathbun and **Sheng Li**. "Multi-Task Adversarial Learning for Treatment Effect Estimation in Basket Trials." *AHLI Conference on Health, Inference and Learning (**CHIL**)*, PMLR 174:79-91, 2022. (Acceptance Rate: 33%)

[C50] Zhixuan Chu, Hui Ding, Guang Zeng, Yuchen Huang, Tan Yan, Yulin Kang and **Sheng Li**. "Hierarchical Capsule Prediction Network for Marketing Campaigns Effect." *The 31st ACM International Conference on Information and Knowledge Management (**CIKM**)*, 2022. (Acceptance Rate: 24%)

[C51] Xueying Yang, Jiamian Wang, Xujiang Zhao, **Sheng Li**, and Zhiqiang Tao. "Calibrate Automated Graph Neural Network via Hyperparameter Uncertainty." *The 31st ACM International Conference on Information and Knowledge Management (**CIKM**)*, 2022. (Acceptance Rate: 24%)

[C52] Weili Shi and **Sheng Li**. "Improving Robustness of Vision Transformers via Data-Augmented Virtual Adversarial Training". *IEEE International Conference on Big Data (**IEEE BigData**)*, 2022.

[C53] Zhongliang Zhou, Nathaniel Hitt, Benjamin Letcher, Weili Shi and **Sheng Li**. "Pigmentation based Visual Learning for Salvelinus fontinalis Individual Re-identification". *IEEE International Conference on Big Data (**IEEE BigData**)*, 2022.

[C54] Saed Rezayi, Haixing Dai, Zhengliang Liu, Zihao Wu, Akarsh Hebbar, Andrew H. Burns, Lin Zhao, Dajiang Zhu, Xiang Li, Quanzheng Li, Wei Liu, **Sheng Li**, Tianming Liu. "ClinicalRadioBERT: Knowledge-Infused Few Shot Learning for Clinical Notes Named Entity Recognition." *International Workshop on Machine Learning in Medical Imaging (in conjunction with MICCAI)*, 2022.

[C55] Zhixuan Chu, Stephen Rathbun and **Sheng Li**. "Graph Infomax Adversarial Learning for Treatment Effect Estimation with Networked Observational Data." *The 27th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**)*, pp. 176-184, 2021. (Acceptance Rate: 15%) [Views & Downloads: 289]
DOI: https://doi.org/10.1145/3447548.3467302

[C56] Saed Rezayi, Handong Zhao, Sungchul Kim, Ryan Rossi, Nedim Lipka and **Sheng Li**. "EDGE: Enriching Knowledge Graph Embeddings with External Text." *The Annual Conference of the North American Chapter of the Association for Computational Linguistics (**NAACL**)*, pp. 2767-2776, 2021. (Long Paper; Acceptance Rate: 29%)
DOI: http://dx.doi.org/10.18653/v1/2021.naacl-main.221

[C57] Yue Bai, Lichen Wang, Zhiqiang Tao, **Sheng Li** and Yun Fu. "Correlative Channel-Aware Fusion for Multi-View Time Series Classification." *The Thirty-Fifth AAAI Conference on Artificial Intelligence (**AAAI**)*, 35(8):6714-6722, 2021. (Acceptance Rate: 21%)
DOI: https://doi.org/10.1609/aaai.v35i8.16830

[C58] Ronghang Zhu, Zhiqiang Tao, Yaliang Li, and **Sheng Li**. "Automated Graph Learning via Population Based Self-Tuning GCN." *The 42nd International ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR**)*, pp. 2096-2100, 2021. (Acceptance Rate: 27%)
DOI: https://doi.org/10.1145/3404835.3463056

[C59] Liuyi Yao, Yaliang Li, **Sheng Li**, Mengdi Huai, Jing Gao and Aidong Zhang. "SCI: Subspace Learning Based Counterfactual Inference for Individual Treatment Effect Estimation." *The 30th ACM International Conference on Information and Knowledge Management (**CIKM**)*, pp. 3583-3587, 2021. (Acceptance Rate: 28%)
DOI: https://doi.org/10.1145/3459637.3482175

[C60] Ronghang Zhu and **Sheng Li**. "Self-supervised Universal Domain Adaptation with Adaptive Memory Separation." *IEEE International Conference on Data Mining (**ICDM**)*, pp. 1547-1552, 2021. (Acceptance Rate: 19%)
DOI: https://doi.org/10.1109/ICDM51629.2021.00203

[C61] Xiaowei Jia, Yiqun Xie, **Sheng Li**, Shengyu Chen, Jacob Zwart, Jeffrey Sadler, Alison Appling, Samantha Oliver, and Jordan Read. "Physics-Guided Machine Learning from Simulation Data: An Application in Modeling Lake and River Systems." *IEEE International Conference on Data Mining (**ICDM**)*, pp. 270-279, 2021. (Acceptance Rate: 19%; Selected as one of **Best-Ranked Papers** at ICDM-2021)
DOI: https://doi.org/10.1109/ICDM51629.2021.00037

[C62] Ronghang Zhu, Xiaodong Jiang, Jiasen Lu, and **Sheng Li**. "Transferable Feature Learning on Graphs Across Visual Domains." *IEEE International Conference on Multimedia and Expo (**ICME**)*, pp. 1-6, 2021. (Acceptance Rate: 15%; Selected as one of **Top Papers** at ICME-2021)
DOI: https://doi.org/10.1109/ICME51207.2021.9428079

[C63] Kang Yuan, **Sheng Li**. "2.5D Pose Guided Human Image Generation." *ACM International Conference on Multimedia Retrieval (**ICMR**)*, pp. 501-505, 2021. (Acceptance Rate: 29%)
DOI: https://doi.org/10.1145/3460426.3463580

[C64] Saed Rezayi, Nedim Lipka, Vishwa Vinay, Ryan A. Rossi, Franck Dernoncourt, Tracy H. King, **Sheng Li**. "A Framework for Knowledge-Derived Query Suggestions." *IEEE International Conference on Big Data (**IEEE BigData**)*, pp. 510-518, 2021. (Acceptance Rate: 19%)
DOI: https://doi.org/10.1109/BigData52589.2021.9671344

[C65] Saed Rezayi, Saber Soleymani, Hamid R. Arabnia and **Sheng Li**. "Socially Aware Multimodal Deep Neural Networks for Fake News Classification." *IEEE 4th International Conference on Multimedia Information Processing and Retrieval (**MIPR**)*, pp. 253-259, 2021. (Acceptance Rate: 20%)
DOI: https://doi.org/10.1109/MIPR51284.2021.00048

[C66] Sumer Singh and **Sheng Li**. "Exploiting Auxiliary Data for Offensive Language Detection with Bidirectional Transformers." *ACL Workshop on Online Abuse and Harms (**ACL WOAH**)*, pp. 1-5, 2021.
DOI: http://dx.doi.org/10.18653/v1/2021.woah-1.1

[C67] Zhixuan Chu, Stephen Rathbun and **Sheng Li**. "Matching in Selective and Balanced Representation Space for Treatment Effects Estimation." *The 29th ACM International Conference on Information and Knowledge Management (**CIKM**)*, pp. 205-214, 2020. (Full Paper, Acceptance Rate: 21%)
DOI: https://doi.org/10.1145/3340531.3412037

[C68] Abhilash Dorle, Fangyu Li, Wenzhan Song and **Sheng Li**. "Learning Discriminative Virtual Sequences for Time Series Classification." *The 29th ACM International Conference on Information and Knowledge Management (**CIKM**)*, pp. 2001-2004, 2020. (Short Paper, Acceptance Rate: 25%)
DOI: https://doi.org/10.1145/3340531.3412099

[C69] Peng Cui, Zheyan Shen, **Sheng Li**, Liuyi Yao, Yaliang Li, Zhixuan Chu and Jing Gao. "Causal Inference Meets Machine Learning." *The 26th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**)*, pp. 3527-2538, 2020.
DOI: https://doi.org/10.1145/3394486.3406460

[C70] **Sheng Li** and Handong Zhao. "A Survey on Representation Learning for User Modeling." *The 29th International Joint Conference on Artificial Intelligence (**IJCAI**)*, pp. 4997-5003, 2020. (Acceptance Rate: 13%)
DOI: https://doi.org/10.24963/ijcai.2020/695

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[J61] **Sheng Li**, Xiaoyuan Jing, Lusha Bian, Shiqiang Gao, Qian Liu, and Yongfang Yao. "Facial Image Recognition based on a Statistical Uncorrelated Near Class Discriminant Approach", *IEICE Trans. on Information & Systems*, Vol. E93-D, No.4, pp. 934-937, Apr. 2010.
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- BOOK CHAPTERS

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[P3] **Sheng Li**, Ming Shao and Yun Fu. Low-Rank Outlier Detection. *Low-Rank and Sparse Modeling for Visual Analysis*, Springer, 2014.
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PATENTS

- *Interpretable user modeling from unstructured user data*
Handong Zhao, Zhiqiang Tao, Zhaowen Wang, **Sheng Li**, Chen Fang
US Patent 11,381,651, 2022
- *Generating scene graphs from digital images using external knowledge and image reconstruction*
Handong Zhao, Zhe Lin, **Sheng Li**, Mingyang Ling, Jiuxiang Gu
US Patent 11,373,390, 2022
- *Adversarial Training for Event Sequence Analysis*
Xiaowei Jia, **Sheng Li**, Handong Zhao, Sungchul Kim
US Patent 11,507,878, 2022
- *Multi-task Equidistant Embedding*
Handong Zhao, Zheng Wen, Sungchul Kim, **Sheng Li**, Branislav Kveton
US Patent: US20200167690A1. Filed: 11/28/2018
- *Predicting Counterfactuals by Utilizing Balanced Nonlinear Representations for Matching Models*
Sheng Li
US Patent: US20200097997A1. Filed: 09/21/2018

- *Online training and update of factorization machines using alternating least squares optimization*
  Saayan Mitra, Xueyu Mao, Viswanathan Swaminathan, Somdeb Sarkhel, **Sheng Li**
  US Patent 11,049,041, 2021
- *Generating and Utilizing Classification and Query-specific Models to Generate Digital Responses to Queries from Client Device*
  Tuan Manh Lai, Trung Bui, **Sheng Li**, Quan Hung Tran, Hung Bui
  US Patent: 11,776,036, 2023.
- *Campaign Effectiveness Determination using Dimension Reduction*
  Sheng Li, Nikolaos Vlassis, Jaya Kawale
  US Patent: US20170140417A1. Filed: 11/12/2015.
- *Item Recommendation via Deep Collaborative Filtering*
  Sheng Li, Jaya Kawale
  US Patent: US10255628B2. Filed: 11/05/2015. Granted: 04/09/2019
- *Temporal Dynamics in Display Advertising*
  Jaya Kawale, **Sheng Li**
  US Patent: US20160148253A1. Filed: 11/25/2014.

TEACHING EXPERIENCE

- **DS 6050 Deep Learning** (*69 Graduate Students*) Spring 2025
  Instructor University of Virginia
- **DS 6200 Computation I** (*6 Graduate Students*) Fall 2024
  Instructor University of Virginia
- **DS 6050 Deep Learning** (*65 Graduate Students*) Spring 2024
  Instructor University of Virginia
- **DS 6200 Computation I** (*5 Graduate Students*) Fall 2023
  Instructor University of Virginia
- **DS 6050 Deep Learning** (*62 Graduate Students*) Spring 2023
  Instructor University of Virginia
- **CSCI 3360 Data Science I** (*37 Undergraduate Students*) Spring 2022
  Instructor University of Georgia
  Teaching Evaluation Score: 4.25 / 5
- **CSCI 8945 Advanced Representation Learning** (*35 PhD/MS students*) Fall 2021
  Instructor University of Georgia
  Teaching Evaluation Score: 4.57 / 5
- **CSCI 3360 Data Science I** (*52 Undergraduate Students*) Spring 2021
  Instructor University of Georgia
  Teaching Evaluation Score: 4.23 / 5
- **CSCI 8945 Advanced Representation Learning** (*30 PhD/MS students*) Fall 2020
  Instructor University of Georgia
  Teaching Evaluation Score: 4.63 / 5
- **CSCI 8950 Machine Learning** (*35 PhD/MS students*) Spring 2020
  Instructor University of Georgia
  Teaching Evaluation Score: 4.41 / 5
- **CSCI 8945 Advanced Representation Learning** (*45 PhD/MS students*) Fall 2019
  Instructor University of Georgia
  Teaching Evaluation Score: 4.48 / 5
- **CSCI 3360 Data Science I** (*48 Undergraduate Students*) Spring 2019
  Instructor University of Georgia
  Teaching Evaluation Score: 4.35 / 5

- **CSCI 8000 Advanced Topics in Machine Learning** (*27 Students*) Fall 2018
  Instructor University of Georgia
  Teaching Evaluation Score: 4.32 / 5

MENTORING

Current PhD Students

- Daiqing Qi (Fall 2021 -), Expected Defense: Spring 2026
- Weili Shi (Fall 2021 -), Expected Defense: Spring 2026
- Dongliang Guo (Fall 2021 -), Expected Defense: Spring 2026
- Mengxuan Hu (Fall 2022 -), Expected Defense: Spring 2027
- Guangya Wan (Fall 2023 -), Expected Defense: Spring 2028
- Hanzhang Yuan (Fall 2023 -), Expected Defense: Spring 2028
- Lehan Yang (Fall 2024 -), Expected Defense: Spring 2029
- Ethan Wang (Fall 2024 -), Expected Defense: Spring 2029

Current Undergraduate Students

- Zoe Wang (Spring 2023 -), BS in Mathematics, UVA
- Anaya Pronit Nath (Fall 2024 -), BS in Data Science
- Yifan Qiao (Spring 2025 -), BS in Statistics

Previous PhD Students

- Zhixuan Chu (Fall 2018 - Spring 2021), PhD in Biostatistics (Co-advised with Dr. Stephen Rathbun), MS in CS.
  Achievements: 8 journal/conference papers at ACM TKDD, IEEE TNNLS, ACM SIGKDD, ACM CIKM, SIAM, CHIL, etc.
  First employment: Senior Algorithm Engineer, Ant Group, China
  Current position: Associate Professor, Zhejiang University, China
- Seyedsaed Rezayidemne (Fall 2018 - Spring 2023), PhD in Computer Science
  Achievements: 8 conference papers at IJCAI, AAAI, NAACL, SDM, IEEE BigData, WACV, IEEE MIPR, etc.
  Current position: NLP Research Scientist, NBME
- Yu Wang (Fall 2019 - Spring 2023), PhD in Statistics, Co-advised with Prof. P. Ji.
  Current position: Machine Learning Engineer, LinkedIn
- Zhongliang Zhou (Spring 2020 - Spring 2024), PhD in Computer Science
  Achievements: 10+ papers at Nature Communications, Bioinformatics, BiB, AAAI, IEEE BigData, eLife, etc.
  Current position: Senior Research Scientist, Merck
- Zhanwen Chen (Fall 2021 - Spring 2024)
- Ronghang Zhu (Fall 2019 - Spring 2025), PhD in Computer Science
  Achievements: 15+ papers at IEEE TPAMI/TNNLS/TCSVT, ACM TKDD, TMLR, ICLR, KDD, AAAI, ICDM, SDM, etc.
  Current position: Applied Scientist, Amazon

Graduated Master Students

- Huibo Yang (Fall 2023 - Fall 2024), MS in CS, UVA
- Tongxuan Tian (Fall 2023 - Fall 2024), MS in CS, UVA
- Yangjiaxin Wei (Spring 2022 - Fall 2023), MS in CS, UGA
- Zhaiming Shen (Spring 2022 - Spring 2023), MS in CS, UGA
- Kushajveer Singh (Spring 2021 - Summer 2022), MS in CS, UGA
- Junwen Fan (Fall 2021 - Summer 2022), MS in CS, UGA
- Akarsh Vasudeva Hebbar (Summer 2021 - Fall 2021), MS in CS, UGA

- Mitchell Buff (Summer 2021 - Fall 2021), MS in CS, UGA
- Kranthimithra Rayapraju (Spring 2021 - Fall 2021), MS in CS, UGA
- Weifeng Wang (Fall 2019 - Spring 2021), MS in CS, Ph.D. in Statistics, UGA
- Weili Shi (Spring 2020 - Spring 2021), MS in CS, UGA. Now PhD student at UGA
- Yuanyi Zhang (Spring 2020 - Spring 2021), MS in CS, UGA
- Matthew P. Pooser (Fall 2020 - Spring 2021), MS in CS, UGA. Now at CDC.
- Daksha Devasthale (Fall 2020 - Spring 2021), MS in CS, UGA. Now at NCR Corporation.
- Brij Rokad (Spring 2020 - Fall 2020), MS in AI, UGA. Now at NCR Corporation.
- Abhilash Dorle (Spring 2019 - Summer 2020), MS in CS, UGA. Now at NCR Corporation.
- Sumer Singh (Spring 2020 - Summer 2020), MS in AI, UGA. Now at TeleTracking.
- Heng-Shiou Sheu (Fall 2019 - Spring 2020), MS in CS, UGA. Now at Turing Text.
- Jiankun Zhu (2018 - 2019), MS in CS, UGA
- Xiaodong Jiang (2018 - 2019), MS in CS, UGA; Ph.D. in Statistics. Now at Meta.
- Kang Yuan (2018 - 2019), MS in AI, UGA

Undergraduate Students
- Andrew H. Burns (Spring 2021), BS in CS, UGA
- Masthan Shaik (Fall 2020), BS in CS, UGA
- Matthew Perez Pooser (Fall 2019), BS in CS, UGA
- Daiqing Qi (Fall 2019), BS in EE, SEU
- Jason Fan (Spring - Fall 2019), BS in CS, UGA
- Beier Zhu (Spring 2019), BS in MIS, UGA

K-12 Students
- Sabrina Bradshaw (Fall 2020), Young Dawgs Program, Oconee County High School, GA

PhD Thesis Committees (UVA)
- Nan Wang (2022 - 2023), CS Ph.D. Thesis Committee, UVA
- Jing Ma (2022 - 2023), CS Ph.D. Thesis Committee, UVA
- Jianhui Sun (2022 - now), CS Ph.D. Thesis Committee, UVA
- Anshuman Suri (2022 - now), CS Ph.D. Thesis Committee, UVA
- Jason Wang (2022 - now), DS Ph.D. Thesis Committee, UVA
- Zhendong Chu (2023 - now), CS Ph.D. Thesis Committee, UVA
- Joseph Choi (2023 - now), DS Ph.D. Thesis Committee, UVA
- Jack Thomas Beerman (2024 - now), DS Ph.D. Thesis Committee, UVA
- Zihan Guan (2025 - now), CS Ph.D. Thesis Committee, UVA
- Zhaoyuan Su (2025 - now), CS Ph.D. Thesis Committee, UVA
- Chen Gong (2025 - now), CS Ph.D. Thesis Committee, UVA

PhD Thesis Committees (UGA)
- Bahaaeddin M M Alaila (2019 - now), CS Ph.D. Thesis Committee, UGA
- Abolfazl Farahani (2019 - 2023), CS Ph.D. Thesis Committee, UGA
- Zhizhong Lin (2019 - 2022), Statistics Ph.D. Thesis Committee, UGA
- Marcus Hill (2020 - 2022), CS Ph.D. Thesis Committee, UGA
- Haixing Dai (2020 - 2023), CS Ph.D. Thesis Committee, UGA
- Abdulkarim Kushk (2020 - 2023), CS Ph.D. Thesis Committee, UGA

- Samiyuru Senarathne (2020 - 2023), CS Ph.D. Thesis Committee, UGA
- Tsunghan Han (2020 - 2023), ECE Ph.D. Thesis Committee, UGA
- Yangjiaxin Wei (2020 - 2023), Geography Ph.D. Thesis Committee, UGA
- Ruowei Liu (2020 - 2023), Geography Ph.D. Thesis Committee, UGA
- Jiawei Xiong (2020 - 2023), Educational Psychology Ph.D. Thesis Committee, UGA
- Abdulrahman Gharawi (2021 - 2023), CS Ph.D. Thesis Committee, UGA
- Farah Saeed (2021 - 2023), CS Ph.D. Thesis Committee, UGA
- Md. Redwan Islam (2021 - 2023), CS Ph.D. Thesis Committee, UGA
- Elika Bozorgi (2021 - 2023), CS Ph.D. Thesis Committee, UGA
- Duna Zhan (2021 - 2023), Statistics Ph.D. Thesis Committee, UGA
- Hemadri Jayalath (2021 - 2023), CS Ph.D. Thesis Committee, UGA
- Zirah Khan (2021 - 2023), CS Ph.D. Thesis Committee, UGA
- Lin Zhao (2022 - 2023), CS Ph.D. Thesis Committee, UGA
- Wayland Yeung (2020 - 2022), Bioinformatics Ph.D. Thesis Committee, UGA
- Zhengliang Liu (2022 - now), CS Ph.D. Thesis Committee, UGA
- Zihao Wu (2022 - now), CS Ph.D. Thesis Committee, UGA

PhD Thesis Committees (External)
- Yizhou Wang, CE Ph.D. Thesis Committee, Northeastern University

MS Thesis Committees
- Xingchen Jian (2019), CS MS Thesis Committee
- Hari Teja Tatavarti (2019 - 2020), AI MS Thesis Committee
- Jiaojiao Wang (2020), AI MS Thesis Committee
- Jayant Parashar (2020), AI MS Thesis Committee
- Aashish Yadavally (2020), AI MS Thesis Committee
- Kadriye Turkyilmaz (2020 - 2021), CS MS Thesis Committee
- Akarsh V Hebbar (2020 2021), CS MS Thesis Committee
- Anagha Joshi (2021), CS MS Thesis Committee
- Kaustubh Rajendra Rajput (2021 - 2022), CS MS Thesis Committee
- Ravi Jyani (2021 2022), CS MS Thesis Committee
- Tangrui Li (2021 2022), AI MS Thesis Committee
- Sushanth Kathirvelu (2021), CS MS Thesis Committee
- Sabri Monaf Sabri (2021), AI MS Thesis Committee
- Neelima Pulagam (2021), CS MS Thesis Committee

Students Achievements
- Ronghang Zhu, 2nd Place, UGA CS Day Poster Competition, 2019
- Seyedsaed Rezayidemne, 3rd Place, UGA CS Day Poster Competition, 2019
- Ronghang Zhu, ACM SIGIR Student Travel Award, 2021
- Ronghang Zhu, IEEE ICDM Student Travel Award, 2021
- Ronghang Zhu, CS Outstanding Graduate Student Award, 2021
- Seyedsaed Rezayidemne, CS Outstanding Graduate Student Award, 2021
- Seyedsaed Rezayidemne, IEEE BigData Student Travel Award, 2021
- Ronghang Zhu, SDM Student Travel Award, 2022

- Seyedsaed Rezayidemne, IJCAI Student Travel Award, 2022
- Zhongliang Zhou, CS Outstanding Graduate Student Award, 2022
- Zhongliang Zhou, Best PhD Dissertation Award, 2024
- Mengxuan Hu, AAAI Student Scholar Award, 2024
- Dongliang Guo, NSF SDM Student Travel Award, 2024
- Mengxuan Hu, ACM SIGIR Student Travel Award, 2024
- Mengxuan Hu, AAAI Student Scholar Award, 2025

Interns at Adobe Research

- Xueyu Mao, PhD Student, University of Texas at Austin, Co-advised on the internship project "Streaming Recommender System", Summer 2017
- Xiang Chen, PhD Student, National University of Singapore, Co-advised on the internship project "Content Matching for Video Advertising", Fall 2017
- Handong Zhao, PhD Student, Northeastern University, Advised on the internship project "Deep User Profile", Fall 2017
- Rui Shu, PhD Student, Stanford University, Advised on the internship project "Deep Unsupervised Domain Adaptation", Fall 2017
- Tuan Lai, PhD Student, Purdue University, Advised on the internship project "Neural Ranking Models for Question Answering", Spring 2018
- Donghyun Kim, PhD, POSTECH, Co-advised on the internship project "Domain-aware User Behavior Prediction using RNN", Spring 2018
- Zhiqiang Tao, PhD Student, Northeastern University, Advised on the internship project "Interpretable User Modeling via Sequence-to-Sequence Embedding", Summer 2018
- Xiaowei Jia, PhD Student, University of Minnesota Twin Cities, Advised on the internship project "Adversarial Learning for Event Sequence Analysis", Summer 2018
- Ekta Gujral, PhD Student, University of California, Riverside, Co-advised on the internship project "Community Detection and POI Recommendation", Summer 2018
- Jiuxiang Gu, PhD Student, National University of Singapore, Co-advised on the internship project "Knowledge Guided Scene Graph Construction", Summer 2018

INVITED TALKS

- *Causality for Trustworthy Artificial Intelligence*
  Plenary Talk, 7th Int'l Conference on Statistics: Theory and Applications Aug. 2025
- *Trustworthy Artificial Intelligence for Automatic Item Generation and Assessment*
  Invited Talk, ATP Innovations in Testing Conference, Orlando, FL Mar. 2025
- *Trustworthy AI Meets Educational Assessment: Challenges and Opportunities*
  Invited Talk, Senior Member Presentation Track at AAAI, Philadelphia, PA Feb. 2025
- *Causal Inference Meets Trustworthy AI*
  Keynote Talk, The 3rd Bridge Program on Continual Causality at AAAI Feb. 2025
- *Fairness in Machine Learning*
  Guest Lecture, Data and Society Course, UVA Nov. 2024
- *Generalizing Models to Unseen Domains and Open Environments*
  Invited Talk, AIML Seminar, UVA Nov. 2024
- *Towards Trustworthy Representation Learning*
  Invited Talk, Nanjing University of Posts & Telecommunications, China Aug. 2024
- *Machine Learning Meets Causal Inference*
  Invited Talk, SAP Inspiration Sessions , Jan. 2024
- *Physics-Guided Graph Neural Networks for Modeling River Networks*
  Invited Talk, Datapalooza 2023, UVA Nov. 2023

- *Deep Learning and Protein Language Models: Foundations and Challenges*
  Invited Talk, IOB Symposium, UGA, Oct. 2023
- *Recent Advances in Deep Learning*
  Guest Lecture of DS 1000, Foundations of Data Science, UVA April 2023
- *Trustworthy Representation Learning Across Domains*
  Department of Statistics, University of Virginia, Charlottesville, VA Sept. 2022
- *Machine Learning Meets Causal Inference*
  Harvard Medical School, MA Oct. 2022
- *Towards Trustworthy Representation Learning*
  Keynote Talk, The Workshop on Data Science and Artificial Intelligence for Responsible Recommendations (DS4RRS) Workshop (at KDD-2022) Aug. 2022
- *Knowledge-Guided Graph Representation Learning*
  Invited Talk, The 4th International Conference on Big Data Engineering May 2022
- *Knowledge-Guided Graph Representation Learning*
  Keynote Talk, The 3rd CML-IOT Workshop (at IJCAI-2021) Aug. 2021
- *Recent Advances in Deep Representation Learning*
  Department of Animal and Dairy Science, University of Georgia, Athens, GA Apr. 2021
- *Knowledge-Guided Graph Representation Learning*
  Institute of Bioinformatics, University of Georgia, Athens, GA Feb. 2021
- *Knowledge-Guided Graph Representation Learning*
  Department of Statistics, University of Georgia, Athens, GA Dec. 2020
- *Machine Learning Meets Causal Inference*
  Keynote Talk, Neural Computing and Applications Conference Jul. 2020
- *Machine Learning Meets Causal Inference*
  IEEE CS Atlanta Section Jul. 2020
- *An Overview of Deep Learning*
  Guest Lecture of CSCI 4550/6550, University of Georgia, Athens, GA Dec. 2019
- *Knowledge Guided Representation Learning on Graphs*
  Adobe Data Science Symposium July. 2019
- *An Introduction to Machine Learning*
  College of Education, The University of Iowa, IA Apr. 2019
- *An Overview of Deep Learning*
  Guest Lecture of CSCI 4720, University of Georgia, Athens, GA Feb. 2019
- *Deep Representation Learning for Sequential Data*
  Kennesaw State University, Kennesaw, GA Jan. 2019
- *An Overview of Deep Learning*
  Guest Lecture of CSCI 4550/6550, University of Georgia, Athens, GA Nov. 2018
- *An Overview of Machine Learning*
  Guest Lecture of CSCI 4530/6530, University of Georgia, Athens, GA Oct. 2018
- *Adversarial Training for Sequential Data*
  Institute for Artificial Intelligence, University of Georgia, Athens, GA Oct. 2018
- *Adversarial Training for Sequential Data*
  DELUG, University of Georgia, Athens, GA Oct. 2018
- *Representation Learning for Data Analytics and Knowledge Inference*
  Dept. of ECE, University of Georgia, Athens, GA Oct. 2018
- *An Overview of Machine Learning and Deep Learning*
  Legal Department, Adobe Systems Inc., San Jose, CA Mar. 2018

- *Learning Robust Representations for Data Analytics*
  ECE Seminar, University of Miami, FL — May 2017
  CIS Seminar, Temple University, PA — Nov. 2016
  Yahoo!-DAIS Seminar, University of Illinois at Urbana-Champaign, IL — Oct. 2016
  CS Seminar, University of Minnesota Twin Cities, MN — Oct. 2016
- *Robust Representations for Data Analytics and Knowledge Inference*
  Adobe Research, San Jose, CA — Nov. 2016
- *Low-Rank and Sparse Modeling for Visual Analytics*
  IFP Seminar, University of Illinois at Urbana-Champaign, IL — Sept. 2016
- *Temporal Subspace Clustering for Human Motion Segmentation*
  New England Computer Vision Workshop, UMass Amherst, MA — Nov. 2015
- *Learning with Robust Data Representations: Methodologies and Applications*
  NEPSSS, Northeastern University, Boston, MA — 2015
- *Rethinking Campaign: A Causal Inference Approach*
  Adobe Research, San Jose, CA — 2015
- *Predicting User Behaviors with Collaborative Filtering*
  Adobe Research, San Jose, CA — 2014
- *Low-Rank Balanced Graph for Semi-supervised Learning*
  CDSP Workshop, Northeastern University, Boston, MA — 2014
- *Color Image Canonical Correlation Analysis for Face Recognition*
  Hohai University, Nanjing, China — 2012
- *Divide-and-Conquer based Discriminant Analysis*
  Harbin Institute of Technology Shenzhen Graduate School, China — 2011

PROFESSIONAL ACTIVITIES

- **Panelist**
  - ◊ National Science Foundation (NSF)
    - National Artificial Intelligence (NAI) Research Institutes
    - Information Integration and Informatics (III)
    - Robust Intelligence (RI)
    - Office of Advanced Cyberinfrastructure (OAC)
    - CISE Research Initiation Initiative (CRII)
    - Graduate Research Fellowships Program (GRFP)
  - ◊ Centers for Disease Control and Prevention (CDC)
  - ◊ Natural Sciences and Engineering Research Council of Canada (NSERC)
  - ◊ Qatar Research, Development, and Innovation (QRDI)
- **Senior Associate Editor**
  - ◊ IEEE Trans. Circuits and Systems for Video Technology (**T-CSVT**) — 2025 - Present
- **Associate Editor**
  - ◊ Transactions on Machine Learning Research (**TMLR**) — 2024 - Present
  - ◊ IEEE Trans. Neural Networks and Learning Systems (**T-NNLS**) — 2022 - Present
  - ◊ IEEE Trans. Cognitive and Developmental Systems (**T-CDS**) — 2023 - Present
  - ◊ IEEE Trans. Consumer Electronics (**T-CE**) — 2024 - Present
  - ◊ IEEE Computational Intelligence Magazine (**CIM**) — 2019 - Present
  - ◊ IEEE Trans. Circuits and Systems for Video Technology (**T-CSVT**) — 2021 - 2024
  - ◊ SPIE Journal of Electronic Imaging (**JEI**) — 2018 - 2022
  - ◊ Neurocomputing — 2017 - 2022

◊ IET Image Processing (**IPR**) 2017 - 2020

- **Editorial Board Member**

◊ Frontiers in Signal Processing 2021 - Present

◊ Neural Computing and Applications (**NCAA**) 2017 - Present

- **Guest Editor**

◊ Image and Vision Computing (**IVC**) 2020 - 2021
Special Issue on Deep Cross-Media Neural Model for Generating Image Descriptions

◊ Neurocomputing 2020 - 2021
Special Issue on Deep Dictionary Learning: Algorithm, Theory and Application

◊ Journal of Visual Communication and Image Representation (**JVCI**) 2020 - 2021
Special Issue on Deep Low-Rank and Sparse Analytics for Robust Visual Intelligence

- **Program Chair**

◊ The First Workshop on Large Foundation Models for Educational Assessment 2024
in Conjunction with NeurIPS

◊ IEEE 12th Int'l Workshop on Analysis and Modeling of Face and Gestures 2023
in Conjunction with ICCV

◊ IEEE 11th Int'l Workshop on Analysis and Modeling of Face and Gestures 2021
in Conjunction with ICCV

◊ IEEE 10th Int'l Workshop on Analysis and Modeling of Face and Gestures 2021
in Conjunction with CVPR

◊ The Second International Workshop on Bringing Semantic Knowledge into Vision and Text Understanding 2020
in Conjunction with IJCAI

◊ The First International Workshop on Bringing Semantic Knowledge into Vision and Text Understanding 2019
in Conjunction with IJCAI

◊ IEEE 9th Int'l Workshop on Analysis and Modeling of Face and Gestures 2019
in Conjunction with CVPR

- **Publicity Chair**

◊ IEEE 7th Int'l Workshop on Analysis and Modeling of Face and Gestures 2017
in Conjunction with ICCV

◊ IEEE 15th Int'l Conference on Machine Learning and Applications (**ICMLA**) 2016

◊ Workshop on Textual Customer Feedback Mining and Transfer Learning 2016
in Conjunction with IEEE International Conference on Big Data (**BigData**)

◊ IEEE 6th Int'l Workshop on Analysis and Modeling of Face and Gestures 2015
in Conjunction with CVPR

- **Tutorial Co-Chair**

◊ SIAM International Conference on Data Mining (**SDM**) 2023

- **Special Session Chair**

◊ IEEE Visual Communications and Image Processing Conference (**VCIP**) 2017
Special Session: *Regularization Tech. for High-Dim. Visual Data Processing*

- **Area Chair**

◊ The Annual Conference on Neural Information Processing Systems (**NeurIPS**) 2025

◊ International Conference on Machine Learning (**ICML**) 2025

◊ International Joint Conference on Artificial Intelligence (**IJCAI**) 2025

◊ International Conference on Learning Representations (**ICLR**) 2025

◊ SIAM International Conference on Data Mining (**SDM**) 2025
◊ The Annual Conference on Neural Information Processing Systems (**NeurIPS**) 2024
◊ International Conference on Machine Learning (**ICML**) 2024
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) 2024
◊ International Conference on Learning Representations (**ICLR**) 2024
◊ SIAM International Conference on Data Mining (**SDM**) 2024
◊ The Annual Conference on Neural Information Processing Systems (**NeurIPS**) 2023
◊ International Conference on Machine Learning (**ICML**) 2023
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) 2023
◊ International Conference on Learning Representations (**ICLR**) 2023
◊ SIAM International Conference on Data Mining (**SDM**) 2023
◊ The Annual Conference on Neural Information Processing Systems (**NeurIPS**) 2022
◊ International Conference on Learning Representations (**ICLR**) 2022
◊ International Conference on Pattern Recognition (**ICPR**) 2020
◊ International Conf. Neural Computing for Advanced Applications (**NCAA**) 2020

- **Senior Program Committee**

◊ AAAI Conference on Artificial Intelligence (**AAAI**) 2024
◊ Pacific-Asia Conf. on Knowledge Discovery and Data Mining (**PAKDD**) 2024
◊ AAAI Conference on Artificial Intelligence (**AAAI**) 2022
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) 2021
◊ AAAI Conference on Artificial Intelligence (**AAAI**) 2021
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) 2020
◊ AAAI Conference on Artificial Intelligence (**AAAI**) 2020
◊ AAAI Conference on Artificial Intelligence (**AAAI**) 2019

- **Program Committee**

◊ International Joint Conference on Artificial Intelligence (**IJCAI**) Survey Track 2024
◊ IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**) 2023
◊ IEEE/CVF International Conference on Computer Vision (**ICCV**) 2023
◊ IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**) 2023
◊ The Int'l Conf. Empirical Methods in Natural Language Processing (**EMNLP**) 2023
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) Survey Track 2023
◊ International Conference on Machine Learning (**ICML**) 2022
◊ ACM SIGKDD Conf. on Knowledge Discovery and Data Mining (**KDD**) 2022
◊ IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**) 2022
◊ The Int'l Conf. Empirical Methods in Natural Language Processing (**EMNLP**) 2022
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) Survey Track 2022
◊ IEEE International Conference on Big Data (**BigData**) 2022
◊ The European Conference on Computer Vision (**ECCV**) 2022
◊ The 6th Workshop on Online Abuse and Harms (**WOAH**) 2022
◊ International Conference on Machine Learning (**ICML**) 2021
◊ International Conference on Learning Representations (**ICLR**) 2021
◊ IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**) 2021
◊ IEEE/CVF International Conference on Computer Vision (**ICCV**) 2021

◊ ACM SIGKDD Conf. on Knowledge Discovery and Data Mining (**KDD**) 2021
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) Survey Track 2021
◊ The Annual Meeting of the Association for Computational Linguistics (**ACL**) 2021
◊ IEEE International Conference on Multimedia and Expo (**ICME**) 2021
◊ The Annual Conference on Neural Information Processing Systems (**NeurIPS**) 2020
◊ International Conference on Machine Learning (**ICML**) 2020
◊ IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**) 2020
◊ The European Conference on Computer Vision (**ECCV**) 2020
◊ International Conference on Learning Representations (**ICLR**) 2020
◊ ACM SIGKDD Conf. on Knowledge Discovery and Data Mining (**KDD**) 2020
◊ The Int'l Conf. Empirical Methods in Natural Language Processing (**EMNLP**) 2020
◊ The Conference on Uncertainty in Artificial Intelligence (**UAI**) 2020
◊ IEEE International Conference on Big Data (**BigData**) 2020
◊ AAAI-20 Emerging Track on AI for Social Impact (**AISI**) 2020
◊ European Conference on Artificial Intelligence (**ECAI**) 2020
◊ Pacific-Asia Conf. on Knowledge Discovery and Data Mining (**PAKDD**) 2020
◊ Int'l Conf. Multimedia Information Processing and Retrieval (**MIPR**) 2020
◊ AAAI Workshop on Affective Content Analysis (**AFFCON**) 2020
◊ The Annual Conference on Neural Information Processing Systems (**NeurIPS**) 2019
◊ IEEE International Conference on Computer Vision (**ICCV**) 2019
◊ ACM SIGKDD Conf. on Knowledge Discovery and Data Mining (**KDD**) 2019
◊ International Conference on Machine Learning (**ICML**) 2019
◊ IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**) 2019
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) 2019
◊ The Conference on Uncertainty in Artificial Intelligence (**UAI**) 2019
◊ International Conference on Learning Representations (**ICLR**) 2019
◊ IEEE International Conference on Big Data (**BigData**) 2019
◊ The British Machine Vision Conference (**BMVC**) 2019
◊ Int'l Conf. Multimedia Information Processing and Retrieval (**MIPR**) 2019
◊ Pacific-Asia Conf. on Knowledge Discovery and Data Mining (**PAKDD**) 2019
◊ AAAI Workshop on Affective Content Analysis (**AFFCON**) 2019
◊ IJCAI Workshop on Financial Technology and Natural Language Processing 2019
◊ Ubicomp Workshop Continual and Multimodal Learning for Internet of Things 2019
◊ IEEE BigMM Workshop Cross-Modal Person Re-identification 2019
◊ The Annual Conference on Neural Information Processing Systems (**NIPS**) 2018
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) 2018
◊ AAAI Conference on Artificial Intelligence (**AAAI**) 2018
◊ ACM SIGKDD Conf. on Knowledge Discovery and Data Mining (**KDD**) 2018
◊ ACM International Conference on Multimedia (**MM**) 2018
◊ Int'l Conf. Multimedia Information Processing and Retrieval (**MIPR**) 2018
◊ IEEE International Conference on Big Data (**BigData**) 2018
◊ Pacific-Asia Conf. on Knowledge Discovery and Data Mining (**PAKDD**) 2018
◊ IEEE International Conference on Tools with Artificial Intelligence (**ICTAI**) 2018
◊ AAAI Workshop on Affective Content Analysis (**AFFCON**) 2018

◊ CCF Int'l Conf. Natural Language Processing and Chinese Computing 2018
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) 2017
◊ AAAI Conference on Artificial Intelligence (**AAAI**) 2017
◊ International Conference Data Science and Advanced Analytics (**DSAA**) 2017
◊ IEEE International Conference on Automatic Face and Gesture Recognition (**FG**) 2017
◊ Int'l Conference on Affective Computing and Intelligent Interaction (**ACII**) 2017
◊ Pacific-Asia Conf. on Knowledge Discovery and Data Mining (**PAKDD**) 2017
◊ CCF Int'l Conf. Natural Language Processing and Chinese Computing 2017
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) 2016
◊ International Joint Conference on Artificial Intelligence (**IJCAI**) 2015
◊ International Conf. on Advanced Cognitive Technologies and Applications 2015
◊ International Conf. on Advanced Cognitive Technologies and Applications 2014

- **Journal Reviewer**
  - ◊ IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)
  - ◊ IEEE Transactions on Neural Networks and Learning Systems (T-NNLS)
  - ◊ IEEE Transactions on Knowledge and Data Engineering (T-KDE)
  - ◊ IEEE Transactions on Image Processing (T-IP)
  - ◊ IEEE Transactions on Cybernetics (T-CYB)
  - ◊ IEEE Transactions on Multimedia (T-MM)
  - ◊ IEEE Transactions on Big Data (T-BD)
  - ◊ IEEE Transactions on Circuits System for Video Technology (T-CSVT)
  - ◊ IEEE Transactions on Emerging Topics in Computational Intelligence (T-ETCI)
  - ◊ IEEE Transactions on Mobile Computing (T-MC)
  - ◊ IEEE Transactions on Systems, Man and Cybernetics: Systems (T-SMCA)
  - ◊ ACM Computing Surveys
  - ◊ ACM Transactions on Knowledge Discovery from Data (TKDD)
  - ◊ ACM Transactions on Multimedia Computing, Communications, and Applications
  - ◊ ACM Transactions on Sensor Networks (TSON)
  - ◊ ACM Transactions on Intelligent Systems and Technology (TIST)
  - ◊ ACM Transactions on Information Systems (TOIS)
  - ◊ Journal of Machine Learning Research (JMLR)
  - ◊ International Journal of Computer Vision (IJCV)
  - ◊ PLoS ONE
  - ◊ International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI)
  - ◊ Journal of Visual Communication and Image Representation (JVCIP)
  - ◊ Pattern Recognition (PR)
  - ◊ Artificial Intelligence in Medicine (AIM)
  - ◊ Pattern Analysis and Applications (PAA)
  - ◊ Neurocomputing
  - ◊ Information Sciences (IS)
  - ◊ Optical Engineering (OE)
  - ◊ KSII Trans. Internet and Information Systems (IIS)
  - ◊ Journal of Electronic Imaging (JEI)

◊ Neural Computing and Applications (NCAA)
◊ Neural Processing Letters
◊ Transportation Research Part B
◊ Patterns
◊ Nature Communications

- **Reviewer for International Conferences**

◊ AAAI Conference on Artificial Intelligence (AAAI)	2013-2017
◊ IEEE International Conference on Data Mining (ICDM)	2013-2016
◊ SIAM International Conference on Data Mining (SDM)	2013-2017
◊ IEEE Conference on Computer Vision and Pattern Recognition (CVPR)	2013-2017
◊ European Conference on Computer Vision (ECCV)	2014-2016
◊ ACM Multimedia (MM)	2013-2016
◊ Asian Conference on Computer Vision (ACCV)	2016
◊ IEEE International Conference on Computer Vision (ICCV)	2013-2015
◊ IEEE International Conference on Big Data (BigData)	2013-2016
◊ IEEE In'l Conf. on Automatic Face and Gesture Recognition (FG)	2013-2017
◊ IEEE International Conference on Multimedia & Expo	2015
◊ Asian Conference on Pattern Recognition (ACPR)	2015
◊ IEEE Int'l Conference on Machine Learning and Applications (ICMLA)	2015
◊ British Machine Vision Conference (BMVC)	2013-2014
◊ IEEE Int'l Conf. on Acoustics, Speech, and Signal Processing (ICASSP)	2013-2014
◊ IEEE International Conference on Image Processing (ICIP)	2009-2011

COMMITTEE SERVICE

• Member, Research Computing Advisory Committee, UVA	2024 -
• Member, Assistant Dean Search Committee, SDS, UVA	2024 -
• Member, Faculty Promotion & Tenure Committee, SDS, UVA	2024 -
• Member, Research Advisory Committee, SDS, UVA	2023 -
• Member, PhD Admission Committee, SDS, UVA	2023 -
• Member, Faculty Search Committee, SDS, UVA	2022 -
• Member, CS Research Events Committee, UGA	2018 - 2022
• Member, CS Award Committee, UGA	2022
• Member, CS Faculty Search Committee (NLP), UGA	2019 - 2020
• Member, CS/Statistics Data Science Program Committee, UGA	2020 - 2022
• Member, CS Faculty Search Committee (Data Science), UGA	2020 - 2021
• Member, Statistics Faculty Search Committee (Data Science), UGA	2020 - 2021
• Member, Statistics Faculty Search Committee (Computer Vision), UGA	2021 - 2022

PROFESSIONAL ASSOCIATIONS

- Institute of Electrical and Electronics Engineers (IEEE) — Senior Member
- Association for Computing Machinery (ACM) — Member
  - ◊ Special Interest Group on Knowledge Discovery and Data Mining (SIGKDD)
  - ◊ Special Interest Group on Information Retrieval (SIGIR)
- American Association for the Advancement of Science (AAAS) — Member
- Association for the Advancement of Artificial Intelligence (AAAI) — Member
- Society for Industrial and Applied Mathematics (SIAM) — Member
- International Neural Network Society (INNS) — Member
- Institute for Operations Research and the Management Sciences (INFORMS) — Member