Yuanqi Du

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SUMMARY

Undergraduate researcher trained in artificial intelligence, with strong communication skills developed from extensive research experience and ability to work independently or as part of a team. Special expertise in the following areas: **Interpretable Machine Learning**; **Deep Graph Learning**; **Deep Generative Models**; **ML for Sciences** (**Biology/Chemistry/Physics**).

EDUCATIONS

George Mason University   **Fairfax, VA**
B.S. in Computer Science   *Aug 2017 - May 2021*
GPA: 4.0/4.0 | Major: 16/18 A+

Huaqiao University   **Xiamen, China**
B.S. in Computer Science   *Aug 2016 - Jun 2017*
GPA: 4.67/5.00

PUBLICATIONS

Conference Papers

- Xiaojie Guo, **Yuanqi Du**, Liang Zhao. Property Controllable Variational Autoencoder via Invertible Mutual Dependence, accepted in ICLR 2021 conference.
- Pengbo Liu, Hu Han, **Yuanqi Du**, Heqin Zhu, Yinhao Li, Feng Gu, Honghu Xiao, Jun Li, Chunpeng Zhao, Xinbao Wu, S. Kevin Zhou, Deep Learning to Segment Pelvic Bones: Large-scale CT Datasets and Baseline Models, accepted in IPCAI 2021 conference, published in IJCARS journal.
- Panneer Selvam Santhalingam, **Yuanqi Du**, Riley Wilkerson, Al Amin Hosain, Ding Zhang, Parth Pathak, Huzefa Rangwala, and Raja Kushalnagar. Expressive ASL Recognition using Millimeter-wave Wireless Signals. IEEE International Conference on Sensing, Communication and Networking (SECON) 2020.
- **Yuanqi Du**, Nguyen Dang, Riley Wilkerson, Parth Pathak, Huzefa Rangwala, Jana Kosecka. American Sign Language Recognition Using an FMCW Wireless Sensor. AAAI Conference on Artificial Intelligence (AAAI) 2020 (Student Abstract).

Journal Papers

- Taseef Rahman, **Yuanqi Du**, Amarda Shehu. Generative Adversarial Learning of Protein Tertiary Structures, accepted in Molecules [impact factor: 3.267] journal.

Workshop Papers

- **Yuanqi Du**, Xiaojie Guo, Amarda Shehu, Liang Zhao. Interpretable Property Controlling Molecule Generation. AAAI 2021 Scientific Discovery with AI (SDA) Workshop, **Oral Presentation**.
- **Yuanqi Du**, Xiaojie Guo, Amarda Shehu, Liang Zhao. Interpretable Molecule Generation via Disentanglement Learning. ACM Conference of Bioinformatics and Computational Biology (BCB) Workshops: Computational Structural Biology Workshop (CSBW) 2020.
- **Yuanqi Du**, Xiaojie Guo, Amarda Shehu, Liang Zhao. From Interatomic Distances to Protein Tertiary Structures with a Deep Convolutional Neural Network. ACM Conference of Bioinformatics and Computational Biology (BCB) Workshops: Computational Structural Biology Workshop (CSBW) 2020.

PREPRINTES & WORKING PAPERS

- **Yuanqi Du**, Xiaojie Guo, Amarda Shehu, Liang Zhao. Controllable Molecular Graph Generation via Monotonic Constraints, submitted to KDD 2021 conference.
- **Yuanqi Du**, Quan Quan, Hu Han, S. Kevin Zhou. Where is the disease? Semi-supervised pseudo-normality synthesis from an abnormal image, submitted to MICCAI 2021 conference.
- Xiaojie Guo*, **Yuanqi Du***, Liang Zhao. Disentangled Representation Learning for Spatial Graph via Information Bottleneck, submitted to KDD 2021 conference.
- **Yuanqi Du**, Xiaojie Guo, Amarda Shehu, Liang Zhao. Disentangled Representation Learning for Interpretable Molecule Generation, submitted to Molecules journal.
- Runsheng Xu*, Zhengzhong Tu*, **Yuanqi Du***, Xiao Yu, Jinlong Li, Zibo Meng, Hongkai Yu. OldNet: Renovate the Old Memories, submitted to ACM MM 2021 conference.
- Quan Quan, Qiyuan Wang, Liu Li, **Yuanqi Du**, S. Kevin Zhou, CT Film Recovery via Disentangling Geometric Deformation and Photometric Degradation: Simulated Datasets and Deep Models, arXiv preprint arXiv:2012.09491 (2020).
- **Yuanqi Du**, et al. trPredictor: Transformer-based Protein Tertiary Structures Predictor from Inter-residue Contacts, going to submit to Bioinformatics journal.
- **Yuanqi Du**, et al. Disentangled Inductive Learning on Spatial-temporal Graphs, going to submit to NeurIPS 2021 confernece.

PROFESSIONAL & RESEARCH EXPERIENCES

Microsoft Research Asia   **Beijing, China**
Research Intern (*Machine Learning & Computational Biology Group*)   *Nov 2020 - Expected May 2021*
Topic: Protein Structure Prediction, Advisor: Jianwei Zhu

Emory University   **Atlanta, US**
Research Assistant   *Sep 2020 - Present*
Topic: Deep Graph Learning and Applications, Advisor: Liang Zhao

Chinese Academy of Sciences   **Beijing, China**
Research Intern (*MIRACLE Group*)   *Aug 2020 - Dec 2020*
Topic: Medical Image Analysis, Advisors: S. Kevin Zhou, Hu Han

George Mason University   **Fairfax, US**
Research Assistant   *Jan 2020 - Apr 2021*
Topic: Learning Protein Structures and Dynamics, Advisor: Amarda Shehu

George Mason University   **Fairfax, US**
Research Assistant   *Apr 2019 - May 2020*
Topic: Application of Milimeter-wave Radar Signals, Advisor: Parth Pathak

TEACHING & MENTORING EXPERIENCES

George Mason University   **Fairfax, US**
Student Research Mentor   *Aug 2020 - Feb 2021*
Topic: Education Data Mining with Focus on Student Performance Prediction

Published a research paper, titled Ensemble Machine Learning System for Student Academic Performance Prediction, in W4U workshop @EDM 2021.

George Mason University   **Fairfax, US**
Undergraduate Teaching Assistant   *Aug 2018 - Dec 2019*
Courses: Object-oriented Programming, Data Structures, Data Mining

George Mason University   **Fairfax, US**

Peer Mentor *Feb 2019 - Dec 2019*
Courses: Engineering Courses & Careers Services

PROFESSIONAL SERVICES

- Reviewer for KDD 2021
- Co-organize DLG 2021, co-located with KDD 2021 (Web Co-chair, PC)
- Co-organize DeepSpatial 2020/2021 co-located with KDD 2020/2021 (Web/Publicity Chair)
- BioKDD 2021 (PC)
- Co-organize KDD 2021 (Web Team)
- Co-organize AAAI 2021 (STudent Technical Volunteer)
- Contribute to the open-source community (e.g. DeepChem)

AWARDS & ACHIEVEMENTS

- NeurIPS, AIJ AIIDE Travel Award *2020*
- NSF REU Fellowship *2019-2020*
- Distinguished Undergraduate Research Award *2019-2020*
- Distinguished Undergraduate Teaching Assistant Award *2019-2020*
- GMU OSCAR Fellowship *Summer 2019*
- Outstanding Undergraduate Teaching Award *2018-2019*

VOLUNTEERS & LEADERSHIPS

- Vision Organization, Founder
- Microsoft Learn Student Ambassador (Organized Intro to AI and ML workshop)
- Student Member of ACM, IEEE, IEEE Computer Society, AAAI, SIAM, ASA Community
- GMU SCAN (Career) Mentor, 2021 Spring
- Activities: NetBrain Club Research Director

MISCELLANEOUS

- Coursera Certificates: Machine Learning; Deep Learning; Deep Neural Network with PyTorch; Probabilistic Graphical Models;