

# Yuanqi Du

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## SUMMARY

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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

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### George Mason University

*B.S. in Computer Science*

GPA: 4.0/4.0 | Major: 16/18 A+

Fairfax, VA

Aug 2017 - May 2021

### Huaqiao University

*B.S. in Computer Science*

GPA: 4.67/5.00

Xiamen, China

Aug 2016 - Jun 2017

## PUBLICATIONS

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### 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

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- **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 conference.
- **Yuanqi Du**, et al. GraphGen: A Large-scale Graph Generative Dataset Collection. In preparation.

## PROFESSIONAL & RESEARCH EXPERIENCES

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### Microsoft Research Asia

*Research Intern (Machine Learning & Computational Biology Group)*

Topic: Protein Structure Prediction, Advisor: Jianwei Zhu

**Beijing, China**

Nov 2020 - Expected May 2021

### Emory University

*Research Assistant*

Topic: Deep Graph Learning and Applications, Advisor: Liang Zhao

**Atlanta, US**

Sep 2020 - Present

### Chinese Academy of Sciences

*Research Intern (MIRACLE Group)*

Topic: Medical Image Analysis, Advisors: S. Kevin Zhou, Hu Han

**Beijing, China**

Aug 2020 - Dec 2020

### George Mason University

*Research Assistant*

Topic: Learning Protein Structures and Dynamics, Advisor: Amarda Shehu

**Fairfax, US**

Jan 2020 - Apr 2021

### George Mason University

*Research Assistant*

Topic: Application of Millimeter-wave Radar Signals, Advisor: Parth Pathak

**Fairfax, US**

Apr 2019 - May 2020

## TEACHING & MENTORING EXPERIENCES

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### George Mason University

*Student Research Mentor*

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.

**Fairfax, US**

Aug 2020 - Feb 2021

### George Mason University

*Undergraduate Teaching Assistant*

Courses: Object-oriented Programming, Data Structures, Data Mining

**Fairfax, US**

Aug 2018 - Dec 2019

**George Mason University**  
*Peer Mentor*  
Courses: Engineering Courses & Careers Services

**Fairfax, US**  
*Feb 2019 - Dec 2019*

## PROFESSIONAL SERVICES

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- 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

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| • 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

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- 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

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