Wenjun Wu

Ph.D Student

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Research Interest

I am a fifth-year Ph.D. student in the GRAIL lab at the University of Washington, Seattle, advised by Prof. Linda Shapiro. My research interests lies in learning interpretable and explainable machine learning models. In particular, I am interested in machine learning for computer-aided diagnostic systems.

Education

2017 - 2023 (expected)
University of Washington, Seattle, WA
Ph.D., Biomedical Informatics
Advisor: Linda Shapiro
Overall GPA: 3.72/4.00

2013 - 2017
Georgia Institute of Technology
B.S. in Biomedical Engineering
Advisor: May Wang, Ajit Yoganathan
Overall GPA: 3.83/4.00

Publications

2021
Scale-Aware Transformers for Diagnosing Skin Biopsy Images
Wu W., Mehta S., Nofallah S., Knezevich S., May C.,
Chang O., Elmore J., Shapiro L.
IEEE Access (accepted)

2020
MLCD: A Unified Software Package for Cancer Diagnosis
Wu W., *Li B., Ezgi M., Mehta S., Bartlett J., Weaver D., Elmore J., Shapiro L.*
JCO Clinical Cancer Informatics 4, 290-298, 2020 [website]

2020
Comparison of Fontan Surgical Options for Patients with Apicocaval Juxtaposition
Wei Z., Johnson C., Trusty P., Stephens M., **Wu W.**, *Sharon R., Srimurugan B., Kottayil B., Sunil G., Fogel M., Yoganathan A.,* Kappanayil M
Pediatric Cardiology, 1-10, 2020

2018
The advantages of viscous dissipation rate over simplified power loss as a Fontan hemodynamic metric
Wei Z., Tree M., Trusty P., **Wu W.**, *Singh-Gryzbon S., Yoganathan A.*
2018 Annals of biomedical engineering 46 (3), 404-416

2017
11C-PIB PET image analysis for Alzheimer's diagnosis using weighted voting ensembles
Wu W., Venugopalan J., Wang M.
IEEE Engineering in Medicine and Biology Society (EMBC 2017)

Research Experience

2021 Summer
Vision Intern
Intuitive Surgical
Worked on simulated dataset and utilization of reinforcement learning (e.g. A2C, PPO and SAC) for accurate and fast alignment of viewers on Da Vinci surgical system.

2018 Summer	**Machine Learning Intern** *Siemens Corporate Research* Worked with product design, modeling, and simulation (PSM) team on data-driven tools for computer-aided manufacturing and design using machine learning. Designed information extraction and data augmentation methods for the problem of rough-stage1 3-axis CNC machining of 3D objects.
2017 - present	**Research Assistant - Prof. Shapiro's Lab** *Paul G. Allen School of Computer Science & Engineering* Create deep learning systems for skin biopsy image analysis from limited data and labels. Design pipeline and architecture, conduct data analysis and communicate with pathologists to troubleshoot labeling and data collection in an NIH R01 project.
2016 - 2017	**Research Assistant - The Bio-MIBLab** *Georgia Institute of Technology, Advisor: May D. Wang* Worked on analysis and diagnosis of Alzheimer's disease from PET images. Papers accepted to *EMBC 2017*.
2014 - 2017	**Research Assistant - The CFM Lab** *Georgia Institute of Technology, Advisor: Ajit Yoganathan* Performed computational fluid dynamics simulations for fontan patients; Papers accepted to *Pediatric Cardiology (2020)* and *2018 Annals of Biomedical Engineering*

Teaching Experience

2017 - 2019	**CSE 373 Data Structure and Algorithm**, *University of Washington* Instructor: Evan MaCarty, Michael Lee and Kasey Champion Led weekly section, write section-handouts and exam study guides. [Course Website]

Skills

Programming	Python, C/C++, shell scripts, MATLAB, R
Relevant	Computer Vision, Applied Biostatistics, Knowledge Representation
Coursework	Bioinformatics, Statistical Learning, Deep learning, Computer Systems Algorithm Analysis, Image Processing, Artificial Intelligence, Data Structure
Languages	English, Chinese, Spanish

Awards

2017	**President Research Award**, *Georgia Institute of Technology*
2016, 2017	**Faculty Honors**, *Georgia Institute of Technology*
2014, 2015	**Dean's list**, *Georgia Institute of Technology*