Wenjun Wu

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Education

2013–2017 **Georgia Institute of Technology**.
B.S. in Biomedical Engineering, Minor in Computing and Intelligence
Overall GPA: 3.83/4.00

2017–present **University of Washington**.
Ph.D in Biomedical Informatics, advisor: Linda Shapiro.
Overall GPA: 3.87/4.00

Publications and Presentations

11C-PIB PET Image Analysis for Automated Alzheimer's Diagnosis Using Weighted Voting Ensembles.
Wenjun Wu, Janani Venugopalan , May D. Wang.
Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2017.[Slides]

The Advantages of Viscous Dissipation Rate over Simplified Power Loss as a Fontan Hemodynamic Metric.
Zhenglun Alan Wei, Michael Tree, Phillip M Trusty, **Wenjun Wu**, Shelly Singh-Gryzbon, Ajit Yoganathan
Annals of biomedical engineering (2017): 1-13.

Study of Chronic Change of Hepatic Blood Flow Distribution of Fontan Patients.
Undergraduate Research Symposium at Georgia Tech, Atlanta, GA, April 2016. [Slides]

Research Experience

Sept 2017 – Current **UW Graphics and Imaging Laboratory**, *Advisor: Linda Shapiro*.
Applying **transfer learning**, multi-scale fusion **CNN** and **generative Adversarial Networks (GAN)** for ISIC 2018 Data Challenge of skin lesion diagnosis.
Utilizing **CNN** variants and Adaboost classifiers to detect cellular-level entities (e.g. nuclei, melanocytes and etc.) and structural entities (e.g. mid-level features like melanocyte bridges, etc.) in digitized whole slide images of melanocytic skin lesions.
Developing an automated diagnosis system from structural and cellular-level entities that can classify digitized slide images into one of five possible diagnostic classes: atypical lesions; melanoma in situ; invasive melanoma stage T1a; and invasive melanoma stage $\geq$T1b.

May 2016 – May 2017 **The Bio-Medical Informatics and Bio-Imaging Laboratory**, *Advisor: May D. Wang*.
Adopted 11C-PIB PET image datasets from ADNI database and implemented preprocessing pipelines.
Extracted 3D image features from processed PET images; applied weighted and unweighted voting ensembles of baseline classifiers to classify PET images into categories that correspond to diagnosis of Alzheimer's disease. *The paper was accepted to EMBC 2017.*

Jan 2015 – May 2017 **The Cardiovascular Fluid Mechanics Lab (CFM Lab)**, *Advisor: Ajit Yoganathan*.
Performed computational fluid dynamics simulations using ANSYS Fluent (ANSYS, PA) on pre-surgery and post-surgery patient under both time-averaged and pulsatile boundary conditions; evaluated flow efficiency using simplified power loss or a viscous dissipation rate metric. *The paper was accepted to Annals of Biomedical Engineering*.

Internship

June 2018 – Sept 2018 **Siemens Corporate Research**, Graduate Research Intern.
Applied reinforcement learning to automate manufacturing process.

Projects

Jan 2018 – Feb 2018 **Language Identification using RNN**.
Using RNN to Identify the language of the written text taken from Twitter, written in nine European languages: English, Spanish, Portuguese, Galician, Basque, Catalan, French, Italian and German.

Jan 2016 – May 2016 **Cancer Stage Diagnosis using Biomedical Image processing**.
Developed supervised and unsupervised segmentation of cellular structures using classification algorithms; extracted various types of features and adopted multiple dimensionality reduction methods; used extracted features to build various classifiers for diagnosing cancer stage from breast biopsy histological images and achieved F1 score of about 0.9. [Demo]

Jan 2017 - May 2017 **AirTech - iOS application for lung function monitoring**.
Developed a lung function monitoring device for chronic lung disease patients that quantifies air flow rate and exhaled gas components, conducts test validity check, and automatically records test results to compatible iOS application. [Code] [Demo]

May 2016 – Sept 2016 **PTT Advisor+**.
Collaborated with CDC (Centers for Disease Control and Prevention) and administered the implementation and design of iOS mobile app to provide guidance for physicians to prescribe anticoagulant drug and test.[Link]

Honors

Georgia Tech President's Undergraduate Research Program Salary Award, Spring 2017.

Georgia Tech Faculty Honors, Spring 2014, Spring 2016, Spring 2017.

Georgia Tech Dean's list, Fall 2014, Spring 2015, Fall 2015.

Teaching Experience

Sept 2017 – Present **Data Structure and Algorithm**, *Instructor: Evan MaCarty, Michael Lee and Kasey Champion*.
Led weekly section, write section-handouts and exam study guides.[Course Website]

Extracurricular and Volunteering activities

Aug 2013 – Dec 2014 **Engineers Without Borders**, *Navajo*, Project Leader, Atlanta, GA.
Proposed a preliminary Composting Toilet model
Built up an experimental model and initiated first stage testing.

Jan 2016 – Dec 2015 **Community Service Projects with Omega Phi Alpha Nu Chapter**, Atlanta, GA.
30 hours+ of volunteer activity at Atlanta Humane Society, Atlanta animal shelter and etc.

Skills

Programming	Python, C/C++, Java, MATLAB, R
Software/Tools	Tensorflow, Pytorch, OpenCV, NLTK, BrainSuite, SPM12 Toolbox, Free Surfer, FSL, xcode, ANSYS Workbench Fluent, LABVIEW, Solidworks, STAR CCM+, SPSS