HUI "AMALIE" SHI

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EDUCATION

Engineer-In-Training (EIT), Chemical Engineering Discipline, Maryland State Board for Professional Engineers *August 2021*

Certified Six Sigma Yellow Belt (CSSYB), American Society for Quality (ASQ) *September 2020*

JOHNS HOPKINS UNIVERSITY, Whiting School of Engineering, Baltimore, Maryland
Master of Science in Biomedical Engineering: December 2019

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Georgia
Bachelor of Science in Biomedical Engineering with Highest Honors: December 2016 **GPA:** 3.64

RESEARCH EXPERIENCE

JOHNS HOPKINS UNIVERSITY, Baltimore, MD
Medical Image Analyst, Advanced Imaging Algorithms & Instrumentation Lab *April 2018 - Dec 2019*
- Designed 3D-printed vascular stenosis, liver, and lung nodule CT target with Solidworks, MATLAB, and AutoCAD.
- Molded and cast anthropomorphic phantoms and spherical targets for CT image quality assessment.
- Segmented / Classified volumetric data using radiomics features (GLCM), power spectral density, filtering, denoising, edge detection, optimization, and clustering to extract & characterize features of the CT image targets with MATLAB.

Graduate Research Assistant, Myocarditis Lab *January 2018 - April 2018*
- Annotated human heart samples with a high-resolution microscope and characterized the distribution of cardiac cells and invading autoimmune cells.
- Administered therapeutic agents through different routes; performed survival animal surgeries in creating heart failure and cardiac arrest models in mice/rats (intubation/mechanical ventilation and arterial/vein cannulation).
- Harvested heart and spleen and cultured cell in vitro; purified and isolated cells and prepared the histology sample of the heart; performed molecular biology experiments such as real-time PCR, ELISA, flow cytometry, Western Blot, and immunostaining.

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, GA
Biological Signal Data Analyst, Neuro-electrophysiology Lab *September 2013 - July 2017*
- Engineered a feedback-controlled implanted stimulation system to reduce foot drop symptom by electrically stimulating the muscle through intramuscular electrodes.
- Applied linear quadratic regulator theory (MATLAB) and NEUROMECHANIC to simulate the stretch of a muscle to predict the response of another muscle.

CONFERENCES, PUBLICATIONS AND AWARDS

[P]. Shi, H., Gang, G., Li, J., Liapi, E., Abbey, C., Stayman, JW., *Performance Assessment of Texture Reproduction in High-Resolution CT*, SPIE 2020 conference proceeding

[C]. Shi, H., Lyle, M., Turtill, C., Nichols, R., *Positive force feedback may ameliorate muscle weakness*, 2017 SfN's 47th annual meeting poster

[C]. Lyle, M., **Shi, H.,** Anderson, H., Rapsas, B., Nichols, R., *Behavioral adaptations during downslope walking after cross-reinnervation of medial gastrocnemius and the pretibial flexors,* 2017 SfN's 47th annual meeting poster

[C]. Li, J., Gang, G., **Shi, H.**, Stayman, JW., *3D-printed Texture Phantoms for Assessment of High-Resolution CT,* AAPM 2019 annual meeting presentation

[A]. Mobile Atlanta Scholarship by the Metro Atlantic Chamber
A merit-based scholarship awarded in 2015 for the work in a wearable necklace device that monitors the compliance of medical regimen

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WORK EXPERIENCE

Software Applications Engineer Informetric Systems Inc., Engineering Group *Feb 2021 - Present*

• Design, develop, and integrate scalable pharmaceutical manufacturing reporting software (C#) to adhere to FDA GxP compliance and improve process efficiency
• Participate in many aspects of software life cycle, including development, testing, and deployment
• Create pipelines to aggregate customer SQL data, transform results into intermediate XML, and render to user as HTML
• Set up testing environments, write new software release tests, and perform formal test procedures on new software

Pharmaceutical Engineer Aphena Pharma Solutions, Engineering Group *Jan 2020 - Feb 2021*

• Developed and authored protocols and reports. Documented the commissioning of automated systems (refrigerators, cartoning machine, filling, capping, and labeling machine, blending tanks, water purification system, and serialization machine) through the development and field execution of IQOQ protocols and process validation of the blending, packaging, filling, serialization, and cleaning processes
• Proposed solutions to inventory control and management issues for cost reduction
• Made lab-scale commercial products to optimize process using tech transfer packages
• Designed, procured, and fabricated tooling and fixtures to support the manufacturing process
• Set up preventive maintenance(PM) schedules and provides training, PM and work instruction to the operators and mechanics
• Completed corrective actions and preventive actions (CAPA) in a timely manner with clear understanding of cGMP practice

Consultant JOHNS HOPKINS UNIVERSITY, Study Consulting Program *Fall 2017*

• Mentored three undergraduate students weekly to help develop better study habits.

Head Mathematics Teaching Assistant GEORGIA INSTITUTE OF TECHNOLOGY *Fall 2014 – Fall 2016*

• Led 20 students in two 50-minute recitation sessions each week to reinforce Calculus I concepts.
• Graded papers and held office hours to answer homework and exam questions.
• Communicated with students and the course instructor to improve classroom learning**.**

Genetic Intern BGI GROUP *Summer 2014*

• Performed basic genetic experiments such as PCR and gel electrophoresis.
• Led a team of 15 students in debates and discussions in genetic research, big data research and bio-ethical issues.

LEADERSHIP EXPERIENCE

Vice President: Georgia Tech Women's Chorus *Fall 2012 – Fall 2015*

Secretary: Biomedical Research Opportunities Society *Fall 2012 – Fall 2014*

Staff Writer: Pioneer BME Publication *Spring 2013 – Spring 2014*

RELEVANT SKILLS

Software: MATLAB, Simulink, SolidWorks, R, Python, C#, SQL, LabVIEW, Illustrator, EndNote, LaTeX

Statistics, Computational Modeling and Applications: Statistics and Probability, Simulation of Biomedical Scenarios, Dynamical System Modeling, Design of Systems Models, Parameter Estimation, Phase-plane Analysis, Optimization

Instrumentation: Oscilloscope, Function Generator, Digital Multimeter, NI myDAQ

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