Gang Qu

✉ adamrt9319@gmail.com   📱 813-606-8327   📍 New Orleans, LA, 70118

EDUCATION

2018- Now

Ph.D. in Biomedical Engineering
Tulane University, GPA:3.81/4.0.

2021 - Now

M.Sc. in Computer Science
Georgia Institute of Technology,
GPA:3.5/4.0.

2016 - 2018

M.Sc. in Bioengineering and Biomedical (Minor: Electronic and Computer Engineering)
University of Florida, GPA:3.83/4.0.

2012 - 2016

B.Sc. in Biomedical Engineering
Xi'an Jiaotong University, GPA:80/100.

LINKS

- Github: GQ93
- Linkedin: gangqu
- Website
- Google Scholar

SKILLS

Programming

Python, C/C++, Java, javascript, Matlab, R

Library/tools

Pytorch, TensorFlow, Numpy, Scipy, Pandas, CVX, GNU/Linux, Scikit-learn, Matplotlib, Networkx

Database

MySQL, EER Diagram Design

Languages

Chinese (native), English (fluent)

Others

Markdown, Git, Vim

RELATED COURSEWORK

Computing Engineering

Computer Networks, Network Security, Database Systems and Design, Software Development Process, Computer Communication

Machine Learning And Data Science

Deep Learning, AI for robotics, Reinforcement Learning and Decision Making, Natural Language Processing, Computer Vision

Math And Statistics

Optimization, Statistical Methods, Data Math, Math And Computation Model For Bio-system

Medical And Biomedical

Anatomy and Physiology for Engineers and Lab

EXPERIENCE

Merck & Co., Inc. - Summer Research Internship   2022
- Applied deep learning to automate CPS scoring in pathology imaging, assessing the clinical utility of the AI solution.

MBB Lab and CGB center, Tulane University - Lab Technician   2020 – Present
- Oversaw data collection, updated website maintenance, and trained new lab members in laboratory techniques, safety protocols, and software applications.

Tulane University - Research Assistant   2018 – Present
- Explored graph deep learning applications in neuroimaging studies and medical image analysis.

University of Florida - Research Assistant   2016 – 2018
- Created a comprehensive preprocessing pipeline and developed a rule-based CNN classification model for breast cancer whole slide imaging data.

PROJECTS

AI-based automated PD-L1 CPS scoring model   2022
- Developed an AI solution for PD-L1 CPS scoring using deep learning, inspired by Merck's KEYTRUDA® therapy, which generated nearly $21 billion in 2022.
- Collaborated with clinical experts to test the AI system using 302 IHC Whole Slide Images, achieving an AUROC of over 0.98, and assessed its clinical relevance by comparing its performance to pathologist evaluations from clinical trials.
- Employed Python and PyTorch for AI development, focusing on automated data quality control, cell segmentation, and predictive modeling with 37,646 annotated cells.

Interpretable Graph deep learning model for multimodal medical imaging analysis   2018-Present
- Devised interpretable graph deep learning techniques, leveraging advanced graph theory applications for the analysis of fMRI data and phenotype prediction.
- Combined multimodal data, investigating connections between various modalities to pinpoint essential biomarkers and Applied state-of-the-art machine learning and deep learning methodologies to guarantee high accuracy in the outcomes.
- Partnered with TReNDS Center (GSU/Gatech/Emory), DICoN Lab (Boys Town National Research Hospital), and Mind Research Network for neuroimaging and brain function research, backed by NIH and NSF grants amounting to over $2 million.

Relevant publications:
1. **Qu, Gang**, et al. "Brain functional connectivity analysis via graphical deep learning." IEEE Transactions on Biomedical Engineering 69.5 (2021): 1696-1706.
2. **Qu, Gang**, et al. "Ensemble manifold regularized multi-modal graph convolutional network for cognitive ability prediction." IEEE Transactions on Biomedical Engineering 68.12 (2021): 3564-3573.
3. Yan, Weizheng, **Qu, Gang**, et al. "Deep learning in neuroimaging: Promises and challenges." IEEE Signal Processing Magazine 39.2 (2022): 87-98.

Rule-based End-to-End Lung Cancer Classification on Whole Slide Images (master thesis)   2017-2018
- Designed a rule-based CNN model (Nottingham Histologic Grade) for classifying SCC and ADC breast cancer cells, leveraging TensorFlow and PyTorch frameworks.
- Employed advanced pre-processing techniques for whole-slide images, including image augmentation and data normalization, to minimize potential biases in the dataset.

Relevant publications:
1. Shi, Xiaoshuang, Hai Su, Fuyong Xing, Yun Liang, **Gang Qu**, and Lin Yang. "Graph temporal ensembling based semi-supervised convolutional neural network with noisy labels for histopathology image analysis." Medical image analysis 60 (2020): 101624.

HONORS & CERTIFICATIONS

2016 and 2017 - **Academic Honor Achievement Award** by UFL.

2020 - **Machine Learning** , Course Certificates by Coursera.

2020 - **Natural Language Processing Specification** Course Certificates by Coursera.

2019 - **Deep Learning Specification**, Course Certificates by Coursera.