# Gang Qu

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

## EDUCATION

2018- 2024

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

2021 - 2024

**M.Sc. in Computer Science**
Georgia Institute of Technology,
GPA:3.72/4.0.

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

## RESEARCH EXPERIENCE

**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.

## INTERNSHIP

**Merck** & **Co., Inc.** - Summer Research Internship　　　2022/5-2022/8
 **AI-based automated PD-L1 CPS scoring model**
- **Innovation in AI Solutions**: Developed an a cutting-edge AI model for PD-L1 CPS scoring, inspired by Merck's KEYTRUDA® therapy, which generated nearly $21 billion in 2022.
- **Collaboration with Clinical Experts**: Collaborated closely with healthcare experts to rigorously assess the AI system, analyzing 302 IHC WSI and achieving an AUROC over 0.98, indicating high diagnostic accuracy.
- **Technical Proficiency and Analytical Rigor**: Employed PyTorch for AI development, automating data quality control and cell segmentation, and conducted predictive modeling on a dataset of 37,646 annotated cells to ensure precision and and reliability.
- **Clinical Utility and Relevance**: Performed thorough evaluations of AI results against clinical trial pathologist assessments, affirming the solution's clinical relevance and transformative potential in pathology.

## PROJECTS

**Interpretable GDL for multimodal medical imaging analysis**　　　2018-Present
- Developed interpretable graph-based deep learning methods for fMRI data analysis and phenotype prediction, employing advanced graph theory. Analyzed multimodal data to identify crucial biomarkers, using state-of-the-art machine learning for high-precision outcomes.
- Collaborated with TReNDS Center, DICoN Lab, and Mind Research Network on neuroimaging and brain function research, supported by NIH and NSF grants exceeding 2 million.

**Relevant publications**:
1. **Qu, Gang**, et al. "Brain functional connectivity analysis via graphical deep learning." IEEE TBME 69.5 (2021): 1696-1706.
2. **Qu, Gang**, et al. "Ensemble manifold regularized multi-modal graph convolutional network for cognitive ability prediction." IEEE TBME 68.12 (2021): 3564-3573.
3. **Qu, Gang**, et al. "Interpretable Cognitive Ability Prediction: A Comprehensive Gated Graph Transformer Framework for Analyzing Functional Brain Networks." IEEE Trans Med Imaging. 2023 Dec 18;PP. doi: 10.1109/TMI.2023.3343365.

**Rule-based End-to-End Lung Cancer Classification on WSI**　　　2017-2018
- Developed a rule-based CNN model for SCC and ADC breast cancer cell classification using TensorFlow and PyTorch frameworks.
- Employed advanced pre-processing techniques for WSI, 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

2023 - Summer Graduate Award by Tulane Data Hub

2022 - Outstanding Self-financed Students Abroad by China Scholar Council

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

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