Qiang Li Ph.D.

Contact

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Interests

AI for Health
Survival Analysis
Medical Image Processing

Education

Georgia State University, Atlanta, GA, US
Ph.D. in Mathematics & Statistics — 2020-2024
Concentration in Machine Learning

Georgia Institute of Technology, Atlanta, GA, US
M.S. in Electrical & Computer Engineering — 2019-2020

Shanghai Maritime University, Shanghai, CN
B.S. in Engineering — 2012-2016

Employment and Experience

Emory University
Research fellow — 2025-

Georgia State University
Instructor — 2020-2022

- MATH 2641 Linear Algebra
- MATH 1001 Quantitative Reasoning

Research Assistant — 2020-2023

- Development of medical web platforms and software for medical image processing
- Implementation of computer vision algorithms and data analysis techniques

Unity Drive Innovation Technology
Software Engineer — 2019

- Build distributed storage, query systems for Autonomous Vehicle
- Testing an end-to-end perception system for autonomous vehicles, object detection, tracking and semantic segmentation.

Journal Publications

Q Li, G Teodoro, Y Jiang, Kong J (2024). NACNet: A Histology Context-aware Transformer Graph Convolution Network for Predicting Treatment Response to Neoadjuvant Chemotherapy in Triple Negative Breast Cancer. *Computerized Medical Imaging and Graphics*,102467,24

DP Long, RP Liu, Y Huang, AY Fu, YL Zhang, ZZ Hao, **Q Li**, HF Xu, ZH Xiang, AC Zhao (2024). An efficient and safe strategy for germ cell-specific automatic excision of foreign DNA in F1 hybrid transgenic silkworms *Insect Science*, 31(1), 28-46.

Q Li, Wang F, Chen Y, Chen H, Wu S, Farris AB, Jiang Y, Kong J (2022). Virtual liver needle biopsy from reconstructed three-dimensional histopathological images: Quantification of sampling error. *Computers in Biology and Medicine*, 147, 105764.

E Lammertse, N Koditala, M Sauzade, H Li, **Q Li**, L Anis, J Kong and E Brouzes (2022). Widely accessible method for 3D microflow mapping at high spatial and temporal resolutions. *Microsyst Nanoeng* 8, 72 .

YL Zhang, Y Huang, PY Wang, **Q Li**, LH Bi, AC Zhao, ZH Xiang, DP Long (2022). Very early corona treatment-mediated artificial incubation of silkworm eggs and germline transformation of diapause silkworm strains. *Frontiers in Bioengineering and Biotechnology*, 10, 843543.

Working Papers

Q Liu, **Q Li** (2024). Spectrum Prior-based and Visibility Fusion Method for Underwater Image Enhancement.*Engineering Applications of Artificial Intelligence* (Under Review)

Q Li (2024). Long-term survival prediction for breast cancer using whole slide images graph-based multimodal deep learning.*Breast Cancer Research* (Under review)

Research Projects

Web application for medical image sampling investigation

- Designed and developed a web application to visualize 3D model: Virtual Liver Needle Biopsy from Reconstructed Three-Dimensional Histopathological Images.
- Used big data tools (Spark, Pig on AWS, Hadoop on Azure) to analyze large graphs
- Scalable 3D data management and querying Tool: high-performance spatial queries on large volumes of spatial data in distributed spatial computing systems

BreastHistoNet: Empowering Research Through an Annotation Hub

- Transformed 1095 gigapixel WSIs of breast cancer from TCGA-BRCA into context-aware histological maps and led the development of a collaborative annotation platform for histology analysis.
- Applied CNNs, pre-trained models (VGG16, ResNet), and advanced clustering techniques for tumor classification and analysis.
- Proficient in computer vision tools like YOLOv8 and Mask R-CNN, with expertise in transformer-based GCNs for medical image analysis.

Honors

Molecular Basis of Disease (MBD) Ph.D. Fellowship & Grant 2022-2024

skills

Programming Language: Java, Python, MATLAB, R, SQL, C++, JavaScript
Tools & Frameworks: D3.js, OpenMPI, Sockets, Git, Firebase, Docker, OpenCV
Artifical Intelligence: Statistical machine learning, Survival analysis

Referee Services

Journals

Artificial Intelligence in Medicine, Experimental Hematology & Oncology; BMC Urology; BMC Cancer; Scientific Reports; Medical Physics