Qiong Wang

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Highlights

- ▷ M.S. in Computer Science, focusing on Deep Learning for Healthcare and Neuroscience.
- ▷ 3 papers (accepted/under review) on biomedical image analysis (ACR, IEEE JBHI).
- ▷ AI product development at ByteDance and other companies, with large-scale deployment (RMB 92M GMV).
- ▷ Founded 2 startups, one raised RMB 200K funding, another acquired for RMB 700K.

Education

Boston University — Sep 2023 – May 2025
Master of Science in Computer Science - GPA: 3.51/4.00 — *Boston, US*

Zhengzhou University — Sep 2007 – June 2011
Bacholar of Arts in Art Design - GPA: 2.90/4.00 — *Zhengzhou, China*

Industry Experience

ByteDance Technology Co. LTD (TikTok) — Feb 2021 – Dec 2022
Product Manager – Led Machine Learning Model Video Search Project, and AI Video Batch Editing Project. — *Shanghai, China*

The Little Black Card APP — Jan 2016 – Jan 2021
Product Manager & Backend Engineer — Founding team member; led product development, reaching RMB 92M monthly GMV and securing Series B financing. Built a referral-based distribution system with over 90% user retention, ranked top 3 in China in 2019. — *Shanghai, China*

Vivian Pearl (E-commerce Startup) — Jan 2014 – Oct 2015
Founder & Software Engineer – Founded a jewelry brand, scaled sales via online channels, and acquired in 2015 for RMB 700K. — *Beijing, China*

Infinite Travel (Mobile App Startup) — May 2013 – Oct 2015
Founder & Software Engineer – Built a hotel reservation app, led a 7-member team, and secured RMB 200K angel funding. — *Beijing, China*

Sohu.com Limited (Top Chinese Internet Company in 2011) — Sep 2011 – Apr 2013
User Interface (UI) Designer — *Beijing, China*

Publications

Enhancing Hand Osteoarthritis Classification with Generative AI: A CycleGAN and EfficientNetB7 Approach
- Zhen Cao, Juan Shan, Xiaohan Jiang, **Qiong Wang**, Timothy McAlindon, Jeffrey Driban, Ming Zhang
- *The American College of Rheumatology (ACR) Annual Meeting 2025. Accepted.*

Enhancing Bone Marrow Lesion Segmentation through Dual-Channel Deep Neural Networks and Test-Time Augmentation
- Shihua Qin, **Qiong Wang**, Juan Shan, Jeffery Driban, Timothy McAlindon, Kevin Wang, Ming Zhang
- *IEEE Journal of Biomedical and Health Informatics. Under Review.*

Optimized Deep Learning Method for Automated Segmentation of Bone Marrow Lesions
- Shihua Qin, **Qiong Wang**, Juan Shan, Jeffrey Driban, Timothy McAlindon, Kevin Wang, Ming Zhang
- *The Osteoarthritis Research Society International (OARSI) 2025 Conference. Accepted.*

A Novel Machine Learning Model to Predict Knee Replacement
- **Qiong Wang**, Juan Shan, Ming Zhang
- *Manuscript in preparation.*

Research Project

Multi-Model Pipeline for 3D Neuronal Mitochondria Segmentation and Proofreading in EM Connectomics — Jun 2025 – Present
Weilab
DVISORS: Prof. Donglai Wei

- Implemented semantic segmentation using nnUNet, and utilized an instance segmentation framework combining SAM, watershed, and cc3d to delineate neuronal mitochondria at scale. Applied Cellable 3D for proofreading and refinement.

Mitochondria Classification in H01 Connectomics Dataset using 3D ResNets — May 2025 – Jul 2025
DVISORS: Prof. Donglai Wei; Collaborator: Prof. Eva Anton (UNC School of Medicine) — *Weilab*

- Implemented 3D ResNet-based pipeline for proofreading H01 E-I neuron pair mitochondria, benchmarking multiple architectures (ResNet18/50, 2.5D/3D/ACS) with MedMNIST3D, and achieving robust performance (Acc 0.91).

Enhancing Hand Osteoarthritis Classification with Generative AI: A CycleGAN and EfficientNetB7 Approach — Sep 2024 – May 2025
AICV Lab
ADVISOR: Prof. Ming Zhang, Prof. Juan Shan

- Developed a CycleGAN pipeline to generate severe OA images (KL3/4) from mild X-rays (KL0/1) and integrated them into EfficientNetB7, achieving 6.0% and 3.1% accuracy improvements for KL3 and KL4 classification.

NLP and Gen AI Modeling with Sentence Transformer and Mistral-7B — Apr 2025
ADVISOR: Prof. Mikhail Chertushkin — *Boston University*

- Developed a two-stage QA system with a Sentence Transformer retriever and Mistral-7B generator, fine-tuned for passage retrieval and answer generation, achieving an evaluation score of 0.38 (precision, recall, BLEU).

Enhancing BML Segmentation through Dual-Channel Deep Neural Networks and Test-Time Augmentation — Jan 2024 – Mar 2025
AICV Lab
ADVISOR: Prof. Ming Zhang

- Implemented the dual channel and TTA pipeline for BML segmentation on MRI images, evaluating deep learning models (Residual U-Net, SwinUNetR, AttentionUNet, U-Net++) and achieving a 69.0% Dice score with U-Net++.

Breast Cancer Detection via Attention-Enhanced ImprovedUNet for Multi-Class Breast Ultrasound Image Segmentation — Feb 2025
Boston University
ADVISOR: Prof. Mikhail Chertushkin

- Designed an attention-enhanced UNet for multi-class breast ultrasound segmentation, integrating attention within skip connections, optimized with AdamW and cosine annealing LR scheduling, improving weighted Dice from 0.54 to 0.79.

A Novel Machine Learning Model to Predict Knee Replacement Base on Logistic Regression, Decision Tree, Random Forest, SVM, XGBoost, ANN, RNN, and CNN — Jun 2024 – Present
AICV Lab
ADVISOR: Prof. Ming Zhang, Prof. Juan Shan

- Developed and optimized machine learning models (Logistic Regression, Random Forest, SVM, XGBoost, ANN, CNN) using MRI-derived features (BMLs, Cdi, effusion), with cross-validation, improving AUC from 65% to 75%.

Neural Machine Translation with Luong Attention for Sequence Alignment — 2025
ADVISOR: Prof. Mikhail Chertushkin — *Boston University*

- Implemented a Seq2Seq model with Luong attention for sequence alignment, using attention-weighted decoding, teacher forcing, and sequence-level loss optimization, achieving a BLEU score of 30.26.

Binary Classification with CatBoost and Stratified Cross-Validation for Early Outcome Prediction — 2025
Boston University
ADVISOR: Prof. Mikhail Chertushkin

- Developed a CatBoost classifier with feature engineering, compared with Logistic Regression, SVM, and XGBoost, and enhanced via Stratified K-Fold CV, RandomizedSearchCV tuning, and SHAP analysis, achieving AUC 0.82.

iLab Consumables Management Project — Oct 2023 – Jan 2024
Position: Full Stack Software Engineer — *Boston University*

- Designed and developed a full-stack lab management system for Harvard University's biological lab, implementing Java back-end with PostgreSQL, RESTful APIs, and a React.js front-end to ensure workflow efficiency and data integrity.

Research Experience

Research Assistant, Weilab at Boston College May 2025 – Present
Advisor: Prof. Donglai Wei

Research Assistant, AICV Lab at Boston University Jan 2024 – May 2025
Advisor: Prof. Ming Zhang, Prof. Juan Shan

Teaching Assistant, Analysis of Algorithms Fall 2024, Spring 2025
Position at Boston University

Honors & Awards

- **The Seed Research Grant** *Boston University, 2024 – 2025*
- **Outstanding Project Achievement Award** *TikTok, Oct 2022*
- **Permanent Member, ByteDance Strategic Advisory Committee** *TikTok, 2021 – 2022*
- **Excellence in Individual Contribution Award** *TikTok, Nov 2021*
- **Achieved Acquisition of Vivian Pearl Brand for 700,000 RMB** *Oct 2015*
- **Raised 200,000 RMB in Angel Investment for Infinite Travel APP** *Dec 2013*

Courses & Skills

Main Courses:	**Languages:**	**Tools/Frameworks:**
CS555 Foundation of Machine Learning	R	RStudio
CS566 Analysis of Algorithm	Python	Jupyter Notebook
CS579 Database Management	SQL	MySQL
CS575 Operating Systems	C++, Java, Python	Linux
CS677 Data Science with Python	Python	NumPy, Scikit-learn, Pandas, Keras, XGBoost
CS665 Software Design and Patterns	Java	IntelliJ IDEA, Git
CS248 Discrete Mathematics		
CS472 Computer Architecture		
CS662 Computer Language Theory		
CS767 Advanced Machine Learning and Neural Networks		PyTorch, Docker, Flask, MongoDB, Wandb