

# Qiong Wang

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## HIGHLIGHTS

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- ▷ **Passion for AI4Healthcare & AI4Neuroscience** – 3 papers on biomedical image analysis (ACR, JBHI, Scientific Data)
- ▷ **Passion for Real-World Tech Applications** – Top tech company (TikTok) & 2 Startups (acquired for RMB 700K)
- ▷ **Passion for Art** – 'Blue-and-White Porcelain Vessel Design' Outstanding Graduation Project

## EDUCATION

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**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  
*Bachelor of Arts in Art Design - Ranked 1st in Graduation Project* Zhengzhou, China

## PUBLICATIONS

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### MitoEM 2.0 – A Benchmark for Challenging 3D Mitochondria Instance Segmentation from EM Images

- Peng Liu, Boyu Shen, Liyuan Liu, , **Qiong Wang**, Shulin Zhang, Abhishek Bhardwaj, Ignacio Arganda-Carreras, Kedar Narayan, Donglai Wei
- *Scientific Data. Under Review.*

### 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.*

### 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.*

### 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.*

## RESEARCH PROJECT

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**Multi-Model Pipeline for 3D Neuronal Mitochondria Segmentation and Proofreading in EM Connectomics** Jun 2025 – Present  
*Boston College*  
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  
*Boston College*  
DVISORS: Prof. Donglai Wei; Collaborator: Prof. Eva Anton (UNC School of Medicine)

- 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.

### 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++.

### Transformer-based Retrieval and Generation for QA with DistilBERT Encoder and Mistral-7B Decoder

Apr 2025  
*Boston University*  
ADVISOR: Prof. Mikhail Chertushkin

- Developed a Transformer-based QA system with DistilBERT (encoder-only) for retrieval and Mistral-7B (decoder-only)

with LoRA fine-tuning for generation, evaluated on IR and BLEU metrics with score: 0.38.

## 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.

## Breast Cancer Detection via Attention-Enhanced ImprovedUNet for Multi-Class Breast Ultrasound Image Segmentation

Feb 2025

Boston University

ADVISOR: Prof. Mikhail Chertushkin

- Developed 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.

## RESEARCH EXPERIENCE

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### Research Assistant, 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

## INDUSTRY EXPERIENCE

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### 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 Mobile APP

Jan 2016 – Jan 2021

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 System (Startup)

Jan 2014 – Oct 2015

Founder & Software Engineer – Developed a full-stack jewelry brand management and online sales system, enabling end-to-end consumer transactions; acquired in 2015 for RMB 700K.

Beijing, China

### Infinite Travel Mobile App (Startup)

May 2013 – Oct 2015

Founder & Software Engineer – Developed a mobile hotel-booking platform; secured RMB 200K angel investment.

Beijing, China

### Sohu.com Limited (Top Chinese Tech Company (2011))

Sep 2011 – Apr 2013

User Interface (UI) Designer

Beijing, China

## HONORS & AWARDS

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

## GRADUATE-LEVEL COURSES

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### • Theory

CS566 Analysis of Algorithm (*Teaching Assistant: Fall 2024, Spring 2025 & Fall 2025*)

CS662 Computer Language Theory

### • System

CS472 Computer Architecture

CS575 Operating Systems

CS579 Database Management

CS665 Software Design and Patterns

### • Machine Learning

CS555 Foundation of Machine Learning

CS677 Data Science with Python

CS767 Advanced Machine Learning and Neural Networks