

# KEHAN QI

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## EDUCATION

### Stony Brook University

Ph.D. Student in Biomedical Informatics

Stony Brook, NY, US

Aug 2024 - Aug 2028 (expected)

### University of Chinese Academy of Sciences

M. Eng. in Computer Technology

Shenzhen, China

Sep 2018 - Jun 2021

### Zhejiang University

B. Eng. in Measurement Control Technology and Instruments

Hangzhou, China

Sep 2013 - Jul 2017

## WORK EXPERIENCE

### Stony Brook University

Research Assistant

Stony Brook, NY, US

May 2025 - present

- **Flow-based MRI Reconstruction:** Derived that unrolled networks are discretized conditional probability flows; proposed ODE-consistent training objective for unrolled networks; improved PSNR/SSIM by 0.85/0.0092 vs E2E-VarNet on Brainweb dataset 1810 slices. [PDF]
- **MLLM-based Pathology Image Processing:** Built slide-level token compression & query-aware routing for token reduction; reduced GPU memory by 38.9% and TFLOPs by 81.9% with 0.015 accuracy drop on WSI-Bench. [PDF]

### Stori

Data Engineer (MLE focus)

Hangzhou, China

Apr 2023 - Jul 2024

- **Low-latency ML Inference System for Risk Control:** Owned end-to-end design, implementation, and deployment of a real-time ML inference system for transaction-level risk control using AWS, achieved 100ms average latency.
- **Real-time Data Pipeline Infrastructure:** Architected and built real-time data pipelines using AWS, and achieved ~10s latency.
- **Data Infrastructure Monitoring System:** Designed and built the data monitoring system using AWS, achieved ~1min latency.
- **Query API Integration:** Designed and built data ingestion and query API, achieved ~10s ingestion latency and ~100ms query latency, and supported ~10 QPS.
- **Team Leadership and Standards:** Established internal coding and deployment standards, CI/CD pipeline, and AWS CDK infrastructure templates. Mentored two junior engineers and led weekly sprint planning and code reviews.

### Amazon

Software Development Engineer (Applied ML System)

Beijing, China

Aug 2021 - Feb 2023

- **Applied ML System Engineering:** Designed and implemented an automated pipeline for scheduled ingestion of ML model prediction data using AWS, ingesting ~10M items in 3 hours.
- **Impact Analysis via Distributed Processing:** Built large-scale data processing pipelines to evaluate the financial impact of ML predictions using Spark. Analyzed ~10B records within 20 minutes.
- **Future Fee Prediction System:** Generated daily future fee estimation reports by combining pre-launch ML predictions with fee rules; batch-processed 1.5B records within 24-hour SLA.

### Tencent

Research Intern

Shenzhen, China

Jun 2020 – Sep 2020

- **Medical Image Processing Research:** Conducted research on CT image processing methods for registration and quality assessment.
- **Registration Quality Assessment:** Developed a landmark-based neural network for evaluating registration quality of medical images.

## SELECTED PAPERS

- **Kehan Qi**, Saumya Gupta, Xiaoling Hu, Qingqiao Hu, Weimin Lyu, and Chao Chen. "Unrolled Networks Are Conditional Probability Flow ODEs in MRI Reconstruction". arXiv preprint arXiv:2512.03020.
- **Qingqiao Hu**, Weimin Lyu, Meilong Xu, **Kehan Qi**, Xiaoling Hu, and Chao Chen. "LoC-Path: Learning to Compress for Pathology Multimodal Large Language Models." arXiv preprint arXiv:2512.05391.

## SKILLS

- **Languages:** Python, SQL, Java
- **ML/Generative Models:** PyTorch, Diffusion Models, flow matching, Diffusers, Transformers
- **Systems:** AWS (SageMaker, Lambda, Kinesis, DynamoDB, S3, Glue, EMR, VPC), CI/CD, CDK
- **Evaluation:** PSNR/SSIM, ablations, significance tests, p95/p99 latency, TFLOPs
- **Data:** Spark, Flink, Hive, MySQL, NoSQL