

KEHAN QI

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EDUCATION

Stony Brook University

Biomedical Informatics

PhD Student

Aug 2024 - present

University of Chinese Academy of Sciences

Master of Engineering in Computer Technology

Graduate Study

Sept 2018 - July 2021

Zhejiang University

Bachelor of Engineering in Measurement Control Technology and Instruments

Undergraduate Student

Sept 2013 - July 2017

PROJECTS

Flow-based MRI Reconstruction

Project Lead – Methodology, Experiments and Writing

Research Project

Jul 2025 – Sept 2025

- **Objective:** Design and implement conditional probability flow for MRI reconstruction using flow matching.
- **Progress:** Paper submitted to ICLR 2026.

VLM-based Pathology Image Processing

Project Member – Baselines, Ablative Studies and Writing

Research Project

July 2025 – Aug 2025

- **Objective:** LLaVA with learnable tokens to compress giant number of tokens for Whole-Slide Image-guided text generation.
- **Link:** [Preprint PDF]

LLM-based Paper Review BOT

Project Lead – System Design and Implementation

Personal Project (in progress)

May 2025 – Present

- **Objective:** LLM & RAG & open dataset for paper review; end-to-end BOT deployed on HF and AWS.
- **Progress:** Implemented MVP and V1; building up dataset.
- **Useful Links:** [PRD] [System Design]

WORK EXPERIENCE

Stori

Data Engineer (MLE focus)

Full-time Employee, Hangzhou, China

Apr 2023 - July 2024

- **Real-time Data Infrastructure:** Architected and built real-time data pipelines using Flink, Kinesis, Lambda, DynamoDB, and Elasticsearch, enabling consistent pipelines for ML model invocation, data monitoring, and downstream query API integration.
- **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. Used AWS DMS + Flink + Kinesis + Lambda + SageMaker for cross-account model invocation with 100ms average latency.
- **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)

Full-time Employee, Beijing, China

Aug 2021 - Feb 2023

- **Applied ML System Engineering:** Designed and implemented an automated pipeline for scheduled product classification updates using ML models deployed on AWS SageMaker. Integrated Lambda, SNS, S3, and DynamoDB to support scalable, production-level ML inference and ingestion with tens of millions of products.
- **Impact Analysis via Distributed Processing:** Built large-scale data process pipelines to evaluate financial impacts of updated classification models using Spark. Analyzed ~10B records to compute fee deltas pre- and post-deployment across multiple dimensions (product, seller, category). Applied Spark job optimization to reduce runtime to within 20 minutes.
- **Future Fee Prediction System:** Developed inference-based fee projection system utilizing classification results. Performed batch processing on 1.5B+ records with AWS Glue and Redshift, and optimized TPS throttling to support SageMaker-based fee computation. Enabled daily updates within a 24-hour SLA.

Tencent

Research Intern

Intern, Shenzhen, China

June 2020 - Sept 2020

- **Registered medical image quality analysis:** a) Detect landmarks from registered CT images. b) Train a neural network to predict registered image quality score, with landmarks and registered image as input. c) A Chinese patent produced.

PAPERS AND PUBLICATIONS

- **Kehan Qi**, Saumya Gupta, Qingqiao Hu, Weimin Lyu, and Chao Chen*. "Unrolled Networks Are Conditional Probability Flow ODEs in MRI Reconstruction". (ICLR 2026 under review)
- Weimin Lyu, Qingqiao Hu, **Kehan Qi**, Zhan Shi, Wentao Huang, Saumya Gupta, and Chao Chen*. "Efficient Whole Slide Pathology VQA via Token Compression." arXiv preprint arXiv:2507.14497 (2025).
- **Kehan Qi**, Hao Yang, Cheng Li, Zaiyi Liu, Meiyun Wang, Qiegen Liu, and Shanshan Wang*. "X-Net: Brain Stroke Lesion Segmentation Based on Depthwise Separable Convolution and Long-range Dependencies". MICCAI 2019.
- Hao Yang, Weijian Huang, **Kehan Qi**, Cheng Li, Xinfeng Liu, Meiyun Wang, Hairong Zheng, and Shanshan Wang* "CLCI-Net: Cross-Level Fusion and Context Inference Networks for Lesion Segmentation of Chronic Stroke". MICCAI 2019.

SKILLS

- **Data Processing Techniques:** Spark, Flink, Hive, MySQL, No-SQL
- **Amazon Web Service (AWS) Skills:** Glue, EMR, Lambda Function, SQS, Managed Service for Apache Flink, API Gateway, VPC, DMS, S3, SageMaker
- **Deep Learning Techniques:** Diffusion Model, In-context Learning, Visual Language Model