

# Qingyang Zhang

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## EDUCATION

### Carnegie Mellon University

Master of Science in Information Networking

Pittsburgh, United States

August 2025 - May 2027

### New York University

Bachelor of Science

Double major in Computer Science and Data Science

GPA: 3.9/4.0

New York, United States

August 2021 - May 2025

## RESEARCH EXPERIENCE

### Advancing Data Selection for Healthcare Foundation Domain Adaptation

Carnegie Mellon University

Advisor: Chenyan Xiong, Associate Professor

May 2025 - Present

- Developed methods to align heterogeneous medical coding systems (ICD, RxNorm, SNOMED, etc.) and apply retrieval-based strategies to identify most relevant external patient samples
- Designed mapping-enabled data selection pipelines to enable healthcare foundation models to adapt across different clinical datasets
- Conducted systematic evaluations to assess how mapping and selection improve performance on benchmarks like EHRSHOT, aiming to enhance model robustness, fairness, and reproducibility in healthcare AI

### Automated Radiology Report Generation System

NYU Grossman School of Medicine

Advisor: Yiqiu Shen, Assistant Professor

May 2024 - August 2025

- Developed a comprehensive system for automated pathology report generation by integrating advanced CNNs and ViTs, such as DenseNet and Swin Transformer, with large language models, including GPT-4 and Llama 3
- Applied state-of-the-art Vision-Language Models (VLMs), including MAIRA-1 and MAIRA-2, to knee X-rays and fine-tuned the models for improved performance
- Collaborated with doctors to optimize report template structure for the LLMs' reference
- Utilized optical character recognition (OCR) along with erosion and dilation techniques to reduce noise in radiology images
- Produced accurate and detailed medical reports that significantly aided residents in learning and improving diagnostic skills

### Pathology Extraction System for Radiology Reports

NYU Grossman School of Medicine

Advisor: Sumit Chopra, Associate Professor

May 2024 - August 2024

- Designed and implemented a pathology extraction system for radiology reports, utilizing pretraining and finetuning for the BERT-based medical model NYUTron
- Integrated Llama 2/3 models into the system and finetuned them using low-rank adaptation (LoRA) to enhance model adaptability and performance
- Achieved a 135% increase in exposure to key pathologies, improving educational outcomes for medical residents

## WORK EXPERIENCE

### Powerchina Shanghai Electric Power Engineering Co., Ltd

Shanghai, China

BACKEND ENGINEER INTERN

June 2022 - July 2022

- Developed and optimized internal employee portal and project management web pages using HTML, Java, and MySQL under the SpringBoot and Mybatis frameworks
- Implemented robust authentication mechanisms for login portal, including JSON Web Tokens (JWT) for secure user sessions and OAuth 2.0 for authorization

## SKILLS

Programming languages: Python, Java, R, HTML, C++, OOP

Framework and tools: MySQL, SpringBoot, MyBatis, Apache Tomcat, Scikit-Learn, Pandas, PyTorch, TensorFlow, Keras, Matplotlib, Seaborn, Docker, Jupyter Notebook