Steven Zhang

Putuo, Shanghai, China | qz2208@nyu.edu

EDUCATION

New York University Shanghai, Shanghai, China — Expected graduation date: May 2025
Bachelor of Science; Double major in Computer Science and Data Science

New York University, New York, United States — Aug 2023 to Aug 2024
Study Abroad Program

HONORS

First prize, The 34th Shanghai Youth Science Innovation Competition, Shanghai, China — Mar 2019

First prize, The 6th National Youth Electronic Information Intelligent Innovation Competition, Beijing, China — Feb 2019

RESEARCH EXPERIENCE

Automated Radiology Report Generation System — May 2024 to Present

Advisor: Yiqiu Shen, Assistant Professor, Department of Radiology, NYU Grossman School of Medicine

• 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 the report template structure for the LLMs' reference to generate the desired reports.

• 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 — May 2024 to Aug 2024

Advisor: Sumit Chopra, Associate Professor, Courant Institute of Mathematical Sciences, NYU

• 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.

Development, Evaluation, and Enhancement of Termolator for Term Extraction — Sep 2023 to Present

Advisor: Adam Meyers, Clinical Associate Professor, Computer Science Department, NYU

• Led the development of the Chinese version of the Termolator project, which entailed employing keywords to systematically search for relevant terms on Wikipedia.

• Designed a comprehensive evaluation strategy for Termolator without ground truth by comparing model-extracted results from two encyclopedia websites.

• Leveraged advanced KNN techniques, including label propagation-like methods, to refine the term glossary and improve extraction performance.

Enhancing Domain Adaptation Through Label Propagation — Jun 2023 to Aug 2023

Advisor: Li Guo, Associate Professor of Practice in Data Science, NYU Shanghai

• Applied label propagation techniques combined with feature similarity matrices to iteratively refine labels, reducing noise and improving label accuracy.

• Achieved 90% accuracy on the VisDA2017 dataset, demonstrating the substantial impact of the combined approach.

Advancing Few-Shot Semantic Segmentation with Backbone and Segmentation Head — Jan 2023 to May 2023

Advisor: Li Guo, Associate Professor of Practice in Data Science, NYU Shanghai

• Applied methodologies including Distillation with No Labels (DINO), PSPNet, and Data-efficient Image Transformer (DEiT) as backbones, coupled with UpperNet and MaskFormer as segmentation heads to enhance segmentation performance.

• Achieved significant improvements in benchmark results on the Few-Shot Semantic Segmentation dataset PASCAL VOC.

SELECTED PROJECT EXPERIENCE

Multiplayer Snake Game Integration into Distributed Chat System Jan 2023 to May 2023

• Developed a distributed chat system with a graphical user interface (GUI) in Python, featuring real-time communication, group management, chat history indexing, and a client-side state machine for smooth user interaction.

• Designed and integrated a multiplayer Snake game into the chat system using Tkinter, achieving real-time synchronization of game states across clients.

WORK EXPERIENCE

NYU Shanghai, Shanghai, China

Teaching Assistant Feb 2025 to May 2025

• Provided 8 hours of weekly teaching, including holding review sessions to ensure students' comprehension of core introduction to computer science and data science concepts and improve their problem-solving skills.

• Facilitated an average of 28 appointments per month, effectively addressing individual student needs and reinforcing class material through personalized tutoring sessions.

• Achieved a perfect score of 5/5 on tutor review surveys, reflecting high levels of efficiency and usefulness as recognized by students.

NYU Shanghai, Shanghai, China

Teaching Assistant Aug 2024 to Dec 2024

• Provided 8 hours of weekly teaching, including holding review sessions to ensure students' comprehension of core discrete mathematics concepts and improve their problem-solving skills.

• Facilitated an average of 28 appointments per month, effectively addressing individual student needs and reinforcing class material through personalized tutoring sessions.

• Achieved a perfect score of 5/5 on tutor review surveys, reflecting high levels of efficiency and usefulness as recognized by students.

POWERCHINA Shanghai Electric Power Engineering Co., Ltd., Shanghai, China

Backend Engineer Intern Jun 2022 to Jul 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 the 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