Cheng Qiu

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🎓 Education

Ph.D. Computer Science   2029
Stony Brook University   New York, USA

Bachelor of Arts   2025
Vanderbilt University   Tennessee, USA
Mathematics/Computer Science (Cum Laude)

🧠 Research Experience

Medical Image Segmentation   May 2023 – Aug 2023
Advisor: Prof. Daniel Moyer   Nasvhille, USA
- Conducted an in-depth study on U-Net and graph-based neural networks,
evaluating their efficacy for medical image segmentation.
- Designed a graph-inspired U-Net model, achieving performance similar to
traditional U-Net approaches.
- Utilized PyTorch for model implementation and conducted experiments on
  public medical imaging datasets.
Project: https://github.com/chengq220/Hybrid_UNet ⌗

Paraphrase Identification   Jan 2022 – May 2022
Advisor: Prof. Daniel Acuna   Syracuse, USA
- Synthesized insights from 20+ academic papers to inform a novel framework
for paraphrase detection.
- Developed a new typology for paraphrases, providing a foundation for
subsequent research projects in the lab.
- Implementing data generation algorithms using LLMs to create novel datasets
  to address the class disparity issue.

Greedy Algorithm for K-Subset Problem   Jun 2021 – Sep 2021
Advisor: Prof. David Perkins   Remote
- Proposed and developed a greedy algorithm inspired by the Wave-function
  collapse algorithm.
- Demonstrated reduction in computation time for solving K-Subset Problem
  under specific scenarios.
- Summarized findings in a manuscript that was presented to Pioneer faculties
  and research fellows.
Manuscript: https://github.com/chengq220/GreedyAlgorithm ⌗

📚 Preprint/Publication

Cheng Qiu, "Leaving Some Facial Features Behind", arXiv preprint arXiv:2411.00824 ⌗

Chao Zhou, **Cheng Qiu**, Lizhen Liang, Daniel Acuna, "Paraphrase identification with deep learning: A review of datasets and methods," arXiv preprint arXiv:2212.06933 ☐ (Accepted IEEE Acess)

💼 Professional Experience

Computer Vision Intern   May 2024 – Aug 2024
Sengoic   Shanghai, China
- Experimented with different YOLO configurations to optimize performance on industrial anomaly detection tasks.
- Implemented data augmentation techniques to expand dataset variability, improving model robustness.
- Applied transfer learning to fine-tune models, achieving higher accuracy with limited datasets.

Front-end Software Development Intern   Jun 2021 – Jun 2022
Revoteen   Remote
- Led the redesign of the company's landing and career pages using HTML, CSS, and Bootstrap, increasing website traffic by 10%.
- Enhanced the application's functionality by introducing new user interfaces and expanding navigation capabilities, resulting in an improved and more intuitive user experience.
- Integrated JavaScript libraries for interactive features, greatly improving website esthetics and user engagement.

Computer Vision Engineer   Aug 2024 – Nov 2024
Kangrui   Remote
- Developed a support vector machine (SVM) model with 95% accuracy for real-time vehicle classification, reducing error rates in detection.
- Designed and deployed a user interface using Python and PyQt, enabling non-technical staff to adjust SVM hyper-parameters.
- Optimized the real-time classification pipeline, reducing operational costs by 3% through improved system efficiency.

🧩 Teaching

Intro To Java TA   Jan 2025 – present

Data Structures TA   Jan 2024 – Jan 2025

🎖 Award

Dean's List   Aug 2022 – present
Vanderbilt University

VISE Summer Research Grant   May 2023
Vanderbilt University

Dean's List   Aug 2021 – May 2022
Syracuse University