Cheng Qiu

ℰ Education

Bachelor of Arts 2022 - 2025

Vanderbilt University Nashville, USA

Bachelor of Science 2021 - 2022

Syracuse University Syracuse, USA

Research Experience

Medical Image Segmentation

Advisor: Prof. Daniel Moyer

May 2023 - Aug 2023 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 similiar 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

Advisor: Prof. Daniel Acuna

Jan 2022 - May 2022

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 algorithm using LLMs to create new dataset to address the issue of class disparity.

Greedy Algorithm for K-Subset Problem

Advisor: Prof. David Perkins

Jun 2021 - Sep 2021

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 scenerios.
- Summarized finding in a manuscript which was presented to Pioneer faculties and research fellows.

Manuscript: https://github.com/chengq220/GreedyAlgorithm ♂

Cheng Qiu, "Leaving Some Facial Features Behind", arXiv preprint arXiv:2411.00824 ☑ (Under Review)

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

➡ Professional Experience

Computer Vision Engineer

Aug 2024 - present

Remote

Kangrui

- Developed a support vector machine (SVM) model with 95% accuracy for realtime vehicle classification, reducing error rates in detection.
- Designed and deployed a user interface using Python and PyQt, enabling non-technical staff to adjust SVM hyperparameters.
- Optimized the real-time classification pipeline, reducing operational costs by 3% through improved system efficiency.

Computer Vision Intern

May 2024 - Aug 2024 Shanghai, China

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- 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

Remote

Revoteen

- 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.

සී Teaching

Data Structures TA Jan 2024 - present



Dean's List

Aug 2022 - present

Vanderbilt University

VISE Summer Research Grant May 2023

Vanderbilt University

Dean's ListAug 2021 - May 2022

Syracuse University