YIN Zhuohao

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Research interests: open to topics related to artificial intelligence, computer vision and machine learning.

Education

Hong Kong University of Science and Technology **Sep. 2019 – Jun. 2023**
Bachelor of Science, double major in Data Science and Technology, and Computer Science *Hong Kong*
CGA: 3.73/4.3 (First Class Honors)

Skills

Programming languages: Python (Numpy, Pandas, Scikit-learn, Matplotlib, etc.), Java, C++, R, SQL, MIPS, JavaScript
Deep learning frameworks: PyTorch, Tensorflow
Web development frameworks: Django

Research Experience

SMCycleGAN: Translating Artistic Portraits to Realistic Visualizations **Oct. 2022 – Dec. 2022**
Course instructor: Prof. Qifeng Chen, HKUST *Course Project (Individual)*

- Conducted a comprehensive literature review on existing works that aimed to tackle the image-to-image translation problem, including the Conditional GAN (pix2pix), CycleGAN, Art2Real, and relevant variant GAN-based models.
- Proposed and implemented a novel model named Semantically-aware Mask CycleGAN (SMCycleGAN), which adopted the concept of masked adversarial loss, where a pretrained U-Net is applied on each training example to produce a mask that segments the subject from the background, and the subject region induces high adversarial loss while the background region induces low adversarial loss.
- Achieved 16.5% lower Fréchet Inception Distance, and more compelling qualitative results than the CycleGAN.

Preprint:
Zhuohao Yin, "Semantically-aware Mask CycleGAN for Translating Artistic Portraits to Photo-realistic Visualizations" (available on arXiv)

Analysis and Understanding of User Behaviors in Online Communities **Feb. 2021 – Jan. 2023**
Supervisor: Prof. Xiaojuan Ma, HKUST *Undergraduate Research Assistant*

- Researched into different target data sources, i.e. domains of online fandom communities, such as Korean pop music, sports, and American pop music, and collected metadata of the communities in the early stage of the project.
- Cleansed user activity data and computed statistics including mean and variance using the **Pandas** library.
- Fine-tuned and executed the event-finding algorithm to identify exceptionally high volume of user activities (posts, comments, and replies) within communities, which are strong indicators of relevant events of interest.
- Conducted a comprehensive and detailed literature survey and drafted the *Related Work* section.
- Yielded a conference paper accepted by CSCW 2023 by participating in drafting and polishing the manuscript, as well as producing and fine-tuning several figures.

Publication:
Qingyu Guo, Chuhan Shi, Chengzhong Liu, **Zhuohao Yin**, Xiaojuan Ma, "Event-induced Sudden Influx of Newcomers in Music Fandom", in *Proceedings of the ACM Conference on Computer-Supported Cooperative Work and Social Computing* (CSCW 2023, to appear)

Project Experience

Real-time Vacancy Detection System Using Fisheye Cameras **Jun. 2022 – Jun. 2023**
Supervisor: Prof. Gary Shueng Han Chan, HKUST *Final Year Project (Group)*

- Proposed the idea of building a real-time vacancy detection system by exploiting visual information after a thorough survey of existing technologies in smart parking lots.
- Researched and implemented image calibration algorithms on distorted fisheye images.
- Incorporated the YOLOv5 object detection algorithm into our detection pipeline by using Intersection over Union (IoU) to map vihecles to parking spaces.
- Jointly developed a web application with my teammates, which displays the real-time status of each parking space and enables drivers to easily access fine-grained information to locate the vacant parking spaces.
- Won the **best FYP award** in the year of 2022-2023. Details can be found here.

Work Experience

LU International (Hong Kong) Limited, Ping An Group **Jun. 2021 – Sep. 2021**

Data Analyst Intern *Shenzhen, China*

- Cleansed and analyzed clients' investment data, making inferences on investment trends and predictions of future performance.
- Conducted client profiling for better portfolio recommendations.
- Produced data visualizations and summary reports for the team's weekly meetings.

Honors & Awards

- HKUST Best FYP Award in Year 2022-2023, Department of Computer Science & Engineering, HKUST **Jun. 2023**
- Dean's List, School of Science, HKUST **Jun. 2023 & Jan. 2023 & Jan. 2021 & Jul. 2020**
- University's Scholarship Scheme for Continuing Undergraduate Students, HKUST **Dec. 2021 & Dec. 2020**
- Runner-up in the fin-tech competition, Lufax (Hong Kong) Ltd. **Dec. 2020**