Dengjia ‹Zephyria› Zhang

adoptedirelia@gmail.com · (+86) 13935239775 · homepage · adoptedirelia

Education

Johns Hopkins University (JHU), MA, USA — Aug. 2024 – May 2026(expected)

MS in Computer Science

Beijing Jiao Tong University (BJTU), Beijing, China — Sept. 2020 – June 2024

BEng in Computer Science and Technology

- GPA 3.86/4.0
- WAM 90.3/100

Research Experience

Wi-Fi-Based Fall Detection for Elderly Individuals — July 2023 – Aug. 2023

Supervisor:Professor Ke Xiong

- Utilized Wi-Fi devices to collect Channel State Information (CSI) as the primary data source.
- Implemented signal processing techniques, such as conjugate multiplication and static component elimination, to extract Doppler Frequency Shift (DFS) spectra from the CSI data.
- Employed MATLAB for efficient processing and analysis of data and utilized the PyTorch framework for implementing deep learning algorithms.

Few-Shot Semantic Segmentation Method — Feb. 2023 – July 2023

Supervisor:Professor Runmin Cong

- The main goal is to develop a more precise semantic segmentation model through small sample sizes.
- Used Cyc-Consistent model as baseline and explored different approaches such as taking top k most similar points.
- Increased the MIoU by 0.5 as compared to the baseline in the first three fold of cross validation.

Physiological Signal Classification Based on Confidence Calibration — Oct. 2022 – Apr. 2023

Supervisor:Professor Jing Wang

- Experimented with U-Sleep model as the baseline to improve the performance of sleep signal classification.
- Developed Gaussian Sampling to baseline to improve the robustness of the model and used Focal Loss to address the gross imbalance between positive and negative samples.
- Chose Expected Calibration Error (ECE) as a more reliable metric and reduced the ECE by 70% as compared to the baseline model.

Unsupervised Depth Estimation in Light Field — Apr. 2022 – Apr. 2023

Supervisor:Professor Shuo Zhang

- Evaluated and experimented with an Attention-based View Selection Networks for light field disparity estimation and confirmed its weak performance in non-textured and occluded areas.
- Developed occlusion aware module and smooth loss that improved performance as confirmed by ablation experiment.
- Used Python and PyTorch to build models and visualize results, reducing the mean squared error by 50%.

Work Experience

AIGC Internship — Feb. 2024 – May 2024

Beijing kuaihui Technology Co. Ltd. Beijing

- Fine-tuned large-scale language models (LLMs) to improve domain-specific text generation capabilities.
- Trained the Stable Diffusion model using the LoRA method to generate images of specific style.

Project Experience

3Dface Editting Sep. 2023 – June 2024

Project Page: https://github.com/adoptedirelia/3dface-editting

- Achieved conversion from a single 2D face image to a 3D face model, retaining the key features of the original image
- Obtained renderings of the 3D face model from different perspectives.
- Introduced StyleClip, allowing people to customize facial expressions and styles.

VOStyle Dec. 2022 – July 2023

Project Page: https://github.com/Miracle-2001/VOStyle

- Developed a UI interface for video-level semantic segmentation in the project which allows users to segment not only images but also videos.
- To segment a video, users only need to select the object to be segmented in the first frame, and the network will use the AOT model to segment the object in the entire video.

Honors and Awards

Honorable Mention, Award on Interdisciplinary Contest in Modeling Apr. 2023
3rd Prize, Award on Blue Bridge Cup Competition, Beijing Division Apr. 2023
1st Prize, Award on Beijing Jiao Tong University Blue Bridge Cup Competition Feb. 2023
3rd Prize, Award on Beijing Jiao Tong University Programming Competition Oct. 2022
2nd Prize, Award on China Undergraduate Mathematical Contest in Modeling, Beijing Division Oct. 2022
2nd Prize, Award on Beijing Jiao Tong University Second-Level Academic Scholarship, top 10% 2021 - 2022
1st Prize, Award on China Undergraduate Statistical Modeling Contest, Beijing Division Apr. 2022
2nd Prize, Award on Beijing Jiao Tong University Mathematical Contest in Modeling Apr. 2022
2nd Prize, Award on Beijing Jiao Tong University Blue Bridge Cup Competition Dec. 2021
3rd Prize, Award on Beijing Jiao Tong University 'Challenge Cup' Competition Oct. 2021
1st Prize, Award on Beijing Jiao Tong University First-Level Academic Scholarship, top 3% 2020 - 2021

Skills

- Software: Linux, macOS, Windows
- Programming Skills: Python, C/C++, Java, VHDL, MySQL, Assembly Language, Hadoop, Git, Pytorch, latex, matlab