Zijian Ling

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Education

Imperial College London London, UK

MRes Artificial Intelligence and Machine Learning Oct. 2022-Oct.2023(expected)

Advisor: Dr. Tolga Birdal

University of Nottingham (UNUK) Nottingham, UK

BSc (Hons) Computer Science with Artificial Intelligence Sept. *2018-Aug. 2022*

Degree Classification: First Class

Advisor: Prof. Tony Pridmore

Experience

University of Nottingham Nottingham, UK

Research Intern - Advisor: Prof. Tony Pridmore Jun. 2022-Aug.2022

- Proposed Hierarchical Cross Attention Module 2.0 and integrate uncertainty for memory frame update mechanism based on my previous thesis
- Achieved similar performance (66.2% AO) compared to STARK-ST101(68.8% AO, ICCV2021) on GOT-10k dataset

Thesis

Advisor: Prof. Tony Pridmore Oct. 2021-Apr.2022

- The main aim of the project is to present a robust visual tracker with stronger spatial-temporal feature fusion ability
- Replaced Resnet backbone in STARK with Swin Transformer and concluded that Swin Large performs better than ResNet-101 with +1.7%AO on GOT-10k using STARK visual tracking architecture
- Propose a Hierarchical Cross Attention Module for feature fusion based on multiple template frames with a division of short-term and long-term memory. The module aims to utilize the rich temporal clues in multiple frames to achieve robust visual tracking. A memory frame update mechanism is applied on the module to control its balance between speed and precision. The HCA tracker achieves 54.1% AO on GOT-10k

Ant Group (Alibaba) – CTO Line – Technology Risk Department Hangzhou, China

Software Development Engineer Intern Jun. 2021-Aug. 2021

- Developed a fund risk detection subsystem in XFund platform
- Designed and developed the fund risk detection subsystem 1.0 which includes the main functions of upstream data standardizing library, key-feature extraction, text detection algorithm, time-sensitive update mechanism using SOFA Boot as main framework and MyBatis as database access framework
- Solved the automatic identification and automatic labeling problem of millions of possible fund risk data per day in the internal attack platform in the department
- Provided accurate support for downstream application

Engineering Psychology Laboratory of Tsinghua University Remote

Research Intern - Advisor: Dr. Jibo He Jun. *2020-Dec. 2020*

- Built a real-time time-series classification neural network including CNN backbone, feature fusion module and classification head to solve driver distraction state classification problem whose data is from wearable watch
- Achieved a recall rate of prediction results to 80% and the precision to 83%
- Applied various data augmentation and sampling methods to solve imbalanced data input in real world experiments
- Proposed the first time-series model in the above classification problem which was then used in the following real traffic experiments

Publications

- One paper has been submitted to CVPR 2023
- Duoduo Hu, Annebella Tsz Ho Choi, Zijian Ling, Jibo HE. Detecting Driving Distraction: A Neural Network Model Using Wearable Devices (AHFE 2022)

Skills

- **Programming Language**: Python, Java, C++, C
- **Others:** PyTorch, Tensorflow, NumPy, OpenCV, Pandas, Matplotlib, Spring Boot, Linux, Git, LaTex