Junhua Liu

https://github.com/JunhuaLiu0
homepage

Junhualiu@link.cuhk.edu.cn Linkedin

EDUCATION

The Chinese University of Hong Kong,Shenzhen Shenzhen, China
Bachelor of Data Science and Big Data Technology *Aug. 2020 – May. 2024*

PUBLICATION

[1] Yili Jin, **Junhua Liu**, Fangxin Wang, "Ebublio: Edge Assisted Multi-user 360-Degree Video Streaming", accepted as poster by IEEE VR 2022. [poster] [code]

MANUSCRIPTS

[2] Yili Jin, **Junhua Liu**, Fangxin Wang, **prepare for ACM Multimedia 2022**.
[3] **Junhua Liu***, Yili jin*, Fangxin Wang, **prepared for ACM Multimedia 2022**.

EXPERIENCE

Joint program by Stanford, Harvard CAMlab Online
Research Assistant *March 2022 - May 2022*

- **Topic**: Artistic dynamic long-term 3D human motion generation
- **Target**: The abstraction of Dunhuang Dance will be processed with Machine Learning and Deep Learning into dance sequences and multimedia-visualization / sonifications.
- **Work and Supervised**: Huazhe Xu,Chengan He,Zeyu Wang, Jiashun Wang

Future Network of Intelligence Institute, Peng Cheng Laboratory Shenzhen, China
Research Assistant *Jan 2022 - May 2022*

- **Topic**: A large scale Gaze-based Behavior Dataset in Spherical Video Streaming
- **Environment**: Unity project using openXR and openVR to track gaze data when watching different 360° video
- **Taxonomy**: Automatic Taxonomy by Saliency Detection: **Group-CAM**, video quality and camera motion
- **Case study**: Improved FoV prediction and caching method based on both gaze and HMD data and analysis

Future Network of Intelligence Institute, Peng Cheng Laboratory Shenzhen, China
Research Assistant *Sep 2021 - Dec 2021*

- **Collaborative Prediction**: Implement of algorithm **Flocking-based live streaming**, a live shared prediction.
- **Video Processing Algorithm**: Developed programs on Cube-map conversion, Frame stitching, Object detection(YOLO3), Spherical Centroid Object Tracking, Bitrate Allocation in Different Chunk.
- **Prediction**: Performed ARIMA model and online learning Passive-Aggressive algorithm to predict viewport
- **Baseline**: Implement of baseline: PanoSalNet, Cluster Viewport, NABA model to compare performance.

Shenzhen Institute of Artificial Intelligence and Robotics for Society Shenzhen, China
Research Intership supervisor by Yan Song, **postponed because of coronavirus epidemic** *Feb 2022 - May 2022*

- **Diagolue System**: Participated in the implementation of a new dialogue answering system

Independent Study Shenzhen, China
Supervisor: Baoxiang Wang,the School of Data Science, CUHKSZ *Mar 2022 - Present*

- **Topic**: Optimization and design of multi-agent reinforcement learning algorithm.

COURSE

- **Optimization**: Optimization I, Convex optimization(EE364a in Standford)
- **Machine learning and Deep learning**: Andrew NG on coursera [certificate], Deeplearning.ai Specialization [certificate], Dive into Deep Learning by Mu Li, CS229(no lab), NLP: CS224n, Standford(no lab) CV: CS231n,Stanford(no lab), Federated learning, Reinforcement learning by Shusen Li. Tongji xuexi fangfa
- **Core courses in Computer Science**: Five chapters of CSAPP; TCP/IP in Computer Network; Data Structure: Junhui Deng, Thu; CS61B, Berkeley, GAMES101
- **Data mining**: Basic data analysis, intro to data mining CS246, Standford: Mining Massive Data Sets

SKILLS

- **Languages**: Python, C++, C#, javascript, R, Julia(learning)
- **Technology**: Matplotlib, Overleaf, Markdown, Matlab, Pytorch, Shell, jupyter, linux, git/github, vim, docker
- **Leadership**: Minister of ACG Club; Co-founder of School of Data Science Student Club

AWARD

- Semi-tuition-free admission scholarship(47500¥/year)   Bowen Scholarship II(50000¥/year)