Junhua Liu

homepage Github
Email 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]
[2] One paper under review in ICME 2022.

Experience

- **Ebublio model** Shenzhen, China
  Research Assistant in Fnii, Peng Cheng Laboratory *Sep 2021 - Dec 2021*
  - **Collaborative Prediction**: Implement of algorithm **Flocking by NYU**, live shared FoVs based 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 Time series ARIMA model and online learning Passive-Aggressive algorithm to predict viewport
  - **Baseline**: Implement of baseline: PanoSalNet, Cluster Viewport, NABA model to compare performance.
- **Gaze-based Behavior Dataset in Spherical Video Streaming** Shenzhen, China
  Research Assistant in Fnii, Peng Cheng Laboratory *Jan 2022 - May 2022*
  - **Environment**: An Unity project based on openXR and openVR to track data when watching 360° video
  - **Taxonomy**: Taxonomy method using Saliency Detection method: **Group-CAM**
  - **Application**: Improved FoV prediction and caching method based on both gaze and HMD data(under way)
- **Start-up** Shenzhen, China
  Software Engineering Intership *Feb 2022 - May 2022*
  - **Diagolue System**: Participated in the implementation of a new dialogue answering system proposed in ACL 2021.
- **Independent Study** Shenzhen, China
  Supervisor: Baoxiang Wang, School of Data Science, CUHKSZ *Mar 2022 - May 2022*
  - **Preliminary idea**: Optimization and design of a multi-agent federated learning mechanism; Aiming to improve robustness and effectiveness of federated learning.

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
- **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)

刘俊华

Github
主页
邮箱 领英

教育经历

- **香港中文大学 (深圳)** 中国，深圳
  数据科学与大数据技术本科 *2020.8 – 2024.12*

论文

[1] Yili Jin, Junhua Liu, Fangxin Wang, "Ebublio: Edge Assisted Multi-user 360-Degree Video Streaming"，被 IEEE VR 2022 poster 板块接收.
[2] 一篇文章在 ICME 2022 审稿

经历

- **Ebublio 模型** 中国，深圳
  研究助理 *2021.9 - 2021.12*
  - **协同预测**: 实现了**纽约大学论文**中的协同算法, 利用多用户的视角进行在线实时联合预测
  - **视频处理算法**: Cube-map 转化, 图片切割, 物体识别 (YOLO3), 基于球体质心的目标检测, 视频区域的码率分配
  - **预测**: 利用 ARIMA 时序模型和在线学习算法 Passive-Aggressive 预测用户视角
  - **基准线**: 实现对照模型: PanoSalNet, Cluster Viewport, NABA model，比较得出 Ebublio 模型效果
- **基于全景视频流和视角行为研究数据集** 中国，深圳
  研究助理 *2022.1 - 2022.5*
  - **环境**: 基于 openXR and openVR 协议，建立 unity 项目收集用户观看全景视频时的视角和头部信息
  - **分类**: 基于注意力图模型**Group-CAM** 的检测来对全景视频进行分类
  - **应用**: 提出了一种基于视角和头部数据的视角预测和缓存模式 (进行中)
- **初创公司** 中国，深圳
  软件工程师实习 *2022.2 - 2022.5*
  - **对话系统**: 参与在 ACL 2021 论文所提出的对话系统的项目落地
- **独立研究** 中国，深圳
  主管: 王韵翔 *Feb 2022 - May 2022*
  - **初步想法**: 多智能体联邦学习机制的优化与设计，旨在提高联邦学习的鲁棒性和效率。

Course

- **优化**: 最优化 I, 凸优化 EE364a, 斯坦福
- **机器学习和深度学习**: coursera 吴恩达 [证书], Deeplearning.ai 深度学习专项 [证书]; 李沐，动手做深度学习; CS229(no lab); NLP: CS224n, 斯坦福 (no lab); CV: CS231n, 斯坦福 (no lab); 联邦学习, 强化学习，李树森; 统计学习方法，李航。基础数据分析; 数据挖掘入门; CS246, 斯坦福: 大数据挖掘
- **计算机科学核心课**: 深入学习计算机系统前五章; 计算机网络 TCP/IP; 凸优化 (斯坦福 EE364a), 数据结构 (邓俊辉, 清华大学; CS61B, 伯克利)

技能

- **语言**: : Python, C++, C#, javascript,R, Julia(learning)
- **技术**: : Matplotlib, Overleaf, Markdown, Matlab, Pytorch, shell, jupyter, linux, git/github, vim, docker

荣誉

- 学费半免奖学金. 博文奖学金 II.