Yixiao Kang

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EDUCATION

University of California, Berkeley, US   09/2023 – 05/2024
- Master of Engineering, Electrical Engineering and Computer Sciences | Berkeley Fung Excellent Award **(top 5%)**

Shanghai Jiao Tong University (SJTU), China   09/2018 - 06/2023
- Bachelor of Engineering in Software Engineering, GPA: **4.0/4.0** (**top 1%**), Principle's Award, Government Scholarship

SKILLS

Domains: Deep learning, Computer Vision, SLAM, AR, Graphics, NLP, Generative AI, ML, Model Optimization
Programming Languages: Python, MATLAB, C, C++, C#, Java, JavaScript, HTML, Swift, SQL, CSS
Tools: TensorFlow, PyTorch, OpenCV, OpenGL, Colab, CUDA, Docker, MySQL, SciPy, Hadoop, Git, Unity, UE4

WORK EXPERIENCE

TikTok | Computer Vision Intern | *CV, SLAM, 3D Reconstruction, LLM, AR, Spacial Audio*   04/2023 – 08/2023
- Formulated an algorithm for **semantic 3D segmentation** and material recognition
- Developed an iOS app to capture **RGBD** datasets and a tool for **semantic 3D reconstruction** using Open3D
- Employed the Meta OVSeg and Segment Anything models to **extract object labels** and acoustic material data

Tencent, Ltd | Machine Learning Intern / *Generative AI, Database, Recommendation*   01/2022 - 06/2022
- Engineered an ecosystem simulation tool that helps scene modelers to generate vegetation in large areas, which increased the modelers' efficiency by **20X** and was applied in Tencent's new game UNDAWN
- Utilized convolutional neural networks (**CNN**) to analyze and understand real-world symbiotic plant cluster data

PROJECTS

Simultaneous Tracking, Tagging, and Mapping | *CV, SLAM* 🔗   **SJTU**, **Prof. Chaoping Chen**, 11/2019 - 01/2021
- Proposed 3D AR navigation, mapping, and target detection framework to tackle the simultaneous localization and mapping (**SLAM**) challenges in computer vision, published a paper, and present at ICDT 2021 as 1st author
- Developed an **object-tracking** algorithm with unsupervised neural networks, achieving **90.3%** precision
- Generated a real-time 3D map utilizing Delaunay triangulation on point cloud data sourced from a **LiDAR** scanner

Photochromic Dye-based Reprogrammable Fiber | *SciPy, OpenCV*   **MIT, Prof. Stefanie Mueller**, 04/2022 – 12/2022
- Innovated a reprogrammable multi-color fiber with localized color change capabilities for interactive wearable garments
- **Prototyped** software-hardware interfaces and **calibrated** the fiber and RGB camera, paper submitted to UIST 2023

Automatic Music Transcription | *Audio Processing, PyTorch, CNN* 🔗   **NUS, Prof. Ye Wang,** 07/2022 - 12/2022
- Developed a CNN-based algorithm for automated music transcription through feature extraction and model optimization
- Boosted by **12.2%** accuracy over baseline on MIR-ST500 dataset and implemented music visualization using Unity

Ubiideas: Catalysing Thinking with AR Glasses | *NLP, Front-end*   **NUS, Prof. Shengdong Zhao,** 07/2022 - 12/2022
- Created a smart glasses app to capture and visualize ubiquitous ideas, and submitted a paper to CHI 2024 (under review)
- Architected an **NLP** solution converting audio inputs into structured data, **visualized** through the **OpenAI** API

Tangible Augmented Reality (AR) souvenir [P3] | *Graphics, Rendering* 🔗 **SJTU, Prof. Xubo Yang,** 06/2021 - 12/2021
- Proposed an original tangible AR souvenir composed of a physical firework launcher and AR models
- Developed a Unity App integrating AR detection, hand gestures, and voice for a multi-sensory experience

PUBLICATIONS

- **Kang, Yixiao**, et al. "Tie Memories to E-souvenirs: Hybrid Tangible AR Souvenirs in the Museum." Adjunct 🔗 Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology. 2022. (UIST 2022 Talk)
- **Kang, Yixiao**, et al. "6: Simultaneous Tracking, Tagging and Mapping for Augmented Reality." SID Symposium Digest of Technical Papers. Vol. 52. 2021. (ICDT 2021 Presentation) 🔗
- Yang, Xuanhui, **Yixiao Kang**, and Xubo Yang. "Retargeting Destinations of Passive Props for Enhancing Haptic Feedback in Virtual Reality." 2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW). IEEE, 2022. 🔗