

## EDUCATION

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- **ShanghaiTech University** Shanghai, China  
*B.Eng. in Computer Science and Technology; GPA: 3.77/4.00; Rank:17/248* Sept. 2020 – present
- **University of California, Berkeley** Berkeley, CA, US  
*Undergraduate Exchange Student in Computer Science; GPA: 3.92/4.0* Aug. 2022 – Mar. 2023

## RESEARCH INTERESTS

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I'm broadly interested in **Computer Vision, Human-Computer Interaction, Machine Learning** and **Cognitive Science**, My current research focuses on the task of multi-object tracking(MOT), generative model and the representation of video-based human emotion in continuous dimension.

## PUBLICATION(\* EQUAL CONTRIBUTION)

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- **VEATIC: Video-based Emotion and Affect Tracking in Context Dataset** Under Review  
*Zhihang Ren\* Jefferson Ortega\* Yifan Wang\* Zhimin Chen, David Whitney, Yunhui Guo, Stella Yu*

## RESEARCH EXPERIENCES

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- **University of California, Berkeley** Berkeley, CA, US  
*Research Assistant in Whitney's Lab (Advisor: Prof. David Whitney, Prof. Stella Yu)* Dec.2022 – present
  - **VEATIC: Video-based Emotion and Affect Tracking in Context Dataset** Mar. 2023 – Aug. 2023
    - \* Construct a new video-based emotion and affect tracking dataset, which contains not only the characters, but also the context information.
    - \* Build up a baseline model with Vision Transformer, to better learn and represent the emotion in continuous dimension.
  - **Representation of Video-Based Human Emotion in Continuous Dimension** Aug. 2023 – present
    - \* Construct a new method to better represent the VEATIC dataset.
    - \* Generalize the method to have a better capacity of representation to the human emotion in both continuous and discrete space.
- **Massachusetts Institute of Technology** Cambridge, MA, US  
*Research Intern in Cocosci Lab (Advisor: Prof. Chuang Gan)* Mar.2023 – present
  - **The Application of Diffusion Model In The Task Of Multi-Object Tracking** Mar. 2023 – present
    - \* Construct a new tracking method to better deal with the ids problem caused by the missing tracking object.
    - \* Interacting the new method pipeline with diffusion model to obtain better performance.

## COMPETITION AND PROJECTS

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- **RoboMaster Competition** Shezhen, China  
*Computer Vision & HCI team member* Dec.2020 – Mar. 2021
  - **Auto-aim project**
    - \* Construct the auto-aim system for the robot by YOLO, which enables it to target enemies automatically.
    - \* Responsible for the communication between the upper computer and the underlying development boards.
    - \* Build a bridge between operators and the auto-aim system.
- **CS280(Computer Vision)** Berkeley, CA, US  
*Course Project(Advisor: Prof. Jitendra Malik, Prof. Alexei A. Efros)* Mar.2023 – May. 2023
  - **Novel Class Discovery**
    - \* Propose a simple yet effective framework to discover novel classes when confronted with a domain gap.
    - \* Train a  $(n + 1)$  way classifier with source data to identify samples belonged to unknown classes.
    - \* Adopt an Optimal Transport based method to learn a discriminated representation for unlabeled unseen data.
- **CS267(Applications of Parallel Computers)** Berkeley, CA, US  
*Course Project(Advisor: Prof. James Demmel, Prof. Laura Grigori)* Mar.2023 – May. 2023

- **Efficient GPU-Based Parallel Construction of BVHs**

\* Propose a method to use GPU to accelerate the process of BVH.

- **CS184(Computer Graphics)**

Berkeley, CA, US

Mar.2023 – May. 2023

*Course Project(Advisor: Prof. Ren Ng, Prof. James O'Brien )*

- **Ball Pivoting Algorithm**

\* Implement the conversion from point cloud to mesh format using Python.

\* Enhance the flexibility and compatibility of 3D object representation in various applications, enabling users to work with the format that suits their needs best.

## HONORS AND AWARDS

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- **Robomaster competition national 2nd prize** 2020-2021
- **Outstanding Individual Award of Social Practice Group in ShanghaiTech** 2021
- **Outstanding Individual Award of Industrial Practice Group in ShanghaiTech** 2022
- **2021-2022 Merit Student in ShanghaiTech** 2022
- **2022-2023 Undergraduate International Exchange Special Scholarship in ShanghaiTech** 2023

## SKILLS

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- **Programming** - Python, C/C++, MATLAB, RISC-V, CUDA, R, HTML
- **Tools & Frameworks** - PyTorch, TensorFlow, JAX, OpenCV, git, LATEX, Markdown
- **Languages** - Mandarin(Native speaker), English(Fluent)