

# Weitai Kang

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## RESEARCH INTERESTS

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Computer Vision, Multimodal Learning, Visual Grounding, Foundation Model, Transformer Explainability, Pose Estimation, etc.

## Education

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### Illinois Institute of Technology

*PhD student, Computer Science*

Chicago, IL

Aug. 2022 – Present

- Research Assistant, advised by Prof. [Yan Yan](#).

### Sun Yat-sen University

*B.S., Mathematics*

Guangzhou, China

Sep. 2017 – July 2022

- GPA: 3.7/4.0
- Honors: Outstanding student scholarship (for four years)

## INDUSTRIAL EXPERIENCE

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### Tencent

*Machine Learning Engineer Intern*

Oct. 2021 – July 2022

Shenzhen, China

- Research on Human Pose Detection.
  - Large scale data joint training for modal improvement.
  - Performance testing, bad case analysis and optimization in product landing scene.
  - Patent: “A performance improvement scheme for human pose estimation model based on video super-resolution and video deblurring”. (under processing)
- Others.
  - Automate scripting and rendering work with Blender, 3Dmax, OpenMMD, etc.
  - Docker environment deployment and GitLab code maintenance.

### SenseTime

*Research Intern*

July 2021 – Sep. 2021

Shenzhen, China

- Research on Video Super-Resolution.
  - Research on transformer-based video super-resolution modal.
  - Ablation experiment and analysis on SOTA modal.

## PROJECT EXPERIENCE

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### Mouse Behavior Analysis

*Computer Vision and Multimedia Laboratory @ IIT*

Aug. 2022 – Present

Chicago, IL

- Mouse detection, pose estimation, re-ID and behavior clustering.

### Image Super Resolution

*Human Cyber Physical Intelligence Integration Lab*

Jan 2021 – Feb. 2021

Guangzhou, China

- Research on transformer-based and HourGlass-based modal for image super-resolution.
- Image super-resolution residual statistics plot visualization.
- Build an advanced PSNR for better metrics.

### Theory Analysis of Cosmic Gravity Based on Convolutional Neural Network

*Sun Yat-Sen University 2020 College Student Innovation and Entrepreneurship Training Program*

June 2020 – Dec. 2020

Zhuhai, China

- Based on the VGG model and the ResNet model, we classify the numerically simulated density fields generated by the three gravitational field models of the universe.

### The application of machine learning in asset allocation

May 2020 – Oct. 2020

- Use lightGBM to predict the rise and fall of ETFs for the next week, select the best 10 ETFs from 297 ETFs, and make weekly adjustments to maximize returns.

### Research on default risk of P2P online loan based on machine learning

Oct. 2018 – May 2019

- Build a Back-Propagation neural network to study the relationship between loan users' loan repayment status and the economic status of their city.

## COMPETITION EXPERIENCE

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- Mathematics competition of Chinese College Student** Oct. 2020
- Awarded Third Prize.
- Mathematics competition of Chinese College Student** Oct. 2019
- Awarded Third Prize.
- China Undergraduate Mathematical Contest in Model** Sep. 2019
- Awarded Third Prize.
- Mathematical Contest In Modeling** Jan. 2019
- Awarded Successful Participant.

## PROFESSIONAL SERVICE

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- Conference Reviewer** 2023
- In Image and Vision Computing
  - In VOCVALC2023

## PROFICIENCY AND SKILLS

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**Technical Skills:** PyTorch/Torch, Python, C/C++, Linux, Git, LaTeX, Matlab, etc.  
**Languages:** English (proficient), Mandarin (native), Cantonese (native)

## CLUB EXPERIENCE

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- Zhuhai Mathematics Association** July 2018 – June 2019  
*Head of Planning Department* Zhuhai, China
- Sun Yat-Sen University school-level associations.

## REFERENCES

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Prof. Yan Yan, Assistant Professor, Illinois Institute of Technology, [yyan34@iit.edu](mailto:yyan34@iit.edu)