

# KAIANG WEN

CS Ph.D. Student at Illinois Tech

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## EDUCATION

Ph.D. in Computer Science

Illinois Institute of Technology

Aug 2023 – Present    Chicago, IL

- GPA: 3.55/4.0
- Research interests: Virtual and Augmented Reality, Machine Learning, Human-Computer Interaction
- Advisor: Prof. Mark Roman Miller

B.S. in Computer Science

Beijing Jiaotong University

Sep 2019 – Jun 2023    Beijing, China

- GPA: 3.5/4.0 (3.76 in the 6th semester)
- Honor: First Place recipient of the Technology Star Scholarship in School of Computer and Information Technology
- BJTU ACM team member

## PUBLICATIONS

### Conference Proceedings

- K. Wen, Y. Huang, M. M. R. Mannan, E. Trost-Goldhammer, and M. R. Miller, "Impediments to motion and cognition in augmented reality," in *Under Review*, 2024. (K. Wen, Y. Huang and M. M. R. Mannan contributed equally to this work).
- K. Wen, B. Xie, B. Duan, and Y. Yan, "Mam-bareg: Mamba-based disentangled convolutional sparse coding for unsupervised deformable multi-modal image registration," in *arXiv preprint arXiv:2411.01399*, 2024.

## STRENGTHS

Self-motivated

Communication

Teamwork

Sense of Humor

Python

PyTorch

AI/ML

Git

C/C++

Unity3D

Web Development

C#

LaTeX

Linux

AR/VR

HCI

## PROFESSIONAL SERVICE

- Peer Reviewing  
Pattern Recognition (Journal)

## EXPERIENCE

Research Assistant

SSIL Lab, Illinois Institute of Technology

Aug 2024 – Present    Chicago, IL

- Designing and implementing VR applications in Unity3D, leveraging spatial computing and advanced motion planning on Oculus Quest to decode user behavior and cognitive states through motion dynamics.
- Utilizing cutting-edge machine learning techniques to build intelligent systems that interpret and anticipate subtle cognitive states, advancing seamless human-computer interaction.
- Conducting independent research initiatives encompassing participant recruitment, structured data collection, deep learning experimentation, and comprehensive result analysis.

Lead Instructor

Summer'24 National Coding Bootcamp, TCTM Kids IT Education

Jul 2023 – Aug 2023    Guangdong, China

- TCTM offers quality IT education targeting students aged three to eighteen through a hybrid platform combining live instruction, classroom tutoring, and online learning. The company was founded in 2002, formerly known as Tarena International, Inc.
- Led instruction for two intensive training camps, delivering seven classes to 210+ students aged 9 to 18, featuring an engaging, clear, and accessible teaching style.
- Designed and taught a comprehensive curriculum spanning foundational C++ syntax to advanced algorithms and data structures, integrating cutting-edge computer technologies to inspire young students and cultivate their problem-solving skills.

Research Intern

Megvii Research (Formerly Face++)

Jul 2022 – Oct 2022    Beijing, China

- Independently led a computer vision project that leveraged laser-illuminated wrist videos to estimate heart rate, integrating traditional digital image processing techniques with deep learning models to improve the accuracy of physiological measurements.
- Investigated accelerating Neural Radiance Field (NeRF) training using PyTorch, improving computational efficiency in 3D scene reconstruction.

Visiting Student


VIPL Lab, Chinese Academy of Science

Aug 2021 – Mar 2023    Beijing, China

- Researched on cervical spondylosis measurement using a U-Net-based model in PyTorch for segmentation and MMPose for pose estimation.
- Achieved a 75% reduction in Cobb metric error (from 20° to 4.88°) through advanced image processing and model optimization, demonstrating expertise in computer vision and machine learning.
- Collaborated with clinicians from Peking University Third Hospital to ensure accurate data labeling and validation.
- Advisor: Prof. Xinhang Song

## VOLUNTEER

 **Tech Empower Program, Beijing Xicheng Library**  
Facilitated digital literacy workshops for individuals from underprivileged backgrounds, delivering hands-on instruction in presentation tools and fundamental computer troubleshooting to bridge the digital divide and empower underrepresented communities.


 **Head of the IT Department, BJTU Volunteer Association**  
Led a team of computer science undergraduates in providing technical support, troubleshooting, and system maintenance for faculty and students, optimizing campus-wide digital efficiency.


 **"No Way" Volunteer Initiative, Beijing Zoo**  
Spearheaded volunteer recruitment, training, and event coordination to promote Beijing Zoo's no-feeding policy, fostering public awareness and a more sustainable wildlife environment.


## REFEREE

**Prof. Mark Roman Miller**  
@ Illinois Institute of Technology  
✉ mmiller30@iit.edu  
Assistant Professor of Computer Science


## HOBBY

 **Travel**  
Enjoy hiking and exploring breathtaking natural landscapes with friends and family. Once went on a cross-country road trip from Chicago to California, visiting 7 national parks along the way!






 **Cooking**  
Signature dishes: Slow-roasted beef ribs, stir-fried broccolini, curried bell pepper lamb, braised beef shank, tomato-braised beef brisket.

 **Ice Sports**  
Still a rookie on ice skating and snowboarding, but I'm gradually leveling up from "falling expert" to "occasionally graceful"!

## LANGUAGES



English   
Mandarin   
Cantonese   
  
  
  
  
  
  
  
  
  
  
  


## AWARDS AND HONORS

-  **Bronze medal in 45th ICPC - Jinan Site**  
Achieved top performance in one of the world's most prestigious programming competitions, showcasing problem-solving, algorithmic thinking, and teamwork under time constraints.
-  **Silver medal in 2020 China Collegiate Programming Contest (CCPC) - Mianyang Site**  
Excelled in the well-recognized and highly competitive programming contest requiring teamwork and innovation, demonstrating exceptional algorithmic problem-solving skills.
-  **Grand Prize in 4th Changfeng Cup Big Data Analysis and Mining Competition**  
**Top 2/662.** Led a team to win the grand prize in a well-recognized national competition focused on big data analysis and mining. Demonstrated exceptional skills in data analytics, machine learning, and problem-solving by developing an innovative solution to a complex real-life problem. Recognized for outstanding technical proficiency and effective teamwork.
-  **First Place recipient of the Technology Star Scholarship in School of Computer and Information Technology, BJTU**  
The **highest honor** for undergraduate students conducting disciplinary competitions and research innovations.
-  **First Prize in 2020 Contemporary Undergraduate Mathematical Contest in Modeling, Beijing**  
Awarded first prize for developing a mathematical model to solve a real-world problem in a competitive, time-constrained environment. Demonstrated mathematical modeling skills, creative problem-solving, and teamwork.

## TEACHING

CS584 Machine Learning TA  
**College of Computing, Illinois Institute of Technology**

 Jan 2025 – Present  Chicago, IL



- Held office hours, maintained the course GitHub group, graded assignments and exams.

CS577 Deep Learning TA  
**College of Computing, Illinois Institute of Technology**

 Aug 2024 – Dec 2024  Chicago, IL



- Held office hours, hosted guest lecture, graded assignments and exams.

CS584 Machine Learning TA  
**College of Computing, Illinois Institute of Technology**

 Jan 2024 – May 2024  Chicago, IL

- Held office hours, taught a lab session, designed programming assignments, graded assignments and exams.

Digital Imaging Processing Sole TA  
**School of Computer and Information Technology, Beijing Jiaotong University**

 Feb 2023 – Jun 2023  Beijing, China

- Independently designed programming assignments to improve student understanding of course content, graded assignments and exams.