

Yung Jhang (Jarvis) Hou

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EDUCATION

Technical University of Munich (TUM) <i>Exchange Program in Informatics</i>	<i>Munich, Germany</i> <i>Sep 2025</i>
• Awarded Transcolarship, a merit-based scholarship for outstanding exchange students	

National Cheng Kung University (NCKU) <i>B.S. in Computer Science and Information Engineering GPA: 3.9/4.0</i>	<i>Tainan, Taiwan</i> <i>Jun 2025</i>
• Received Dean's Award, Fall 2021 & Spring 2022	

PROFESSIONAL EXPERIENCE

Research Assistant <i>Collaborate with TUM PhD student Weihang Li</i>	<i>Remote</i> <i>Present</i>
• exploring CAD models and feature matching for improved pose estimation, aiming to publish on CVPR 2026	
Research Assistant <i>Multimedia and Computer Vision Laboratory, NCKU</i>	<i>Tainan, Taiwan</i> <i>Oct 2024 - Mar 2025</i>
• Contributed to the publication " <u>Vision-Based 3D Baseball Swing Trajectory Reconstruction and Swing Performance Analysis</u> . MMM2026, MOMST: Special Session on Multi Object Multi Sensor Tracking"	
• Improved bat motion 3D reconstruction accuracy by 2.8 cm MPJPE (Mean Per Joint Position Error) and 2.1 cm PMPJPE (Procrustes Aligned MPJPE) with YOLOv8-Pose fine-tuning and swing trajectory curve fitting	
• Reduced 90% hardware cost by replacing Vicon system (industry-standard motion capture system, 39 markers and 8 sensors) with two Sony AX700 cameras, and Optimized system runtime (including setup, calibration, reconstruction) by 95.5% with an automated recalibration pipeline using ArUco markers (for camera pose estimation) and multiprocessing	
Research Intern <i>KeepTossingLab (KTL)</i>	<i>Tainan, Taiwan</i> <i>Oct 2024 - Mar 2025</i>
• Enhanced ball detection accuracy by 50% in low-light, noisy conditions by improving YOLOv7 fine-tuning performance through depth-based detection and filtering algorithms	
• Solved high-speed baseballs (approximately 70 mph) tracking in occluded scenes by developing a linked-list-based algorithm incorporating speed vector analysis for trajectory prediction	
Research Team Leader <i>Robotics Laboratory, NCKU</i>	<i>Tainan, Taiwan</i> <i>Aug 2023 - Jun 2024</i>
• Developed an automated pitching replay system using MediaPipe for joint-angle extraction, designed a pitching-phase identification method, and built a complete pipeline that provides swing metrics (e.g., trigger-to-impact time, swing angle), bat-path visualization via YOLOv7, and a swing-analysis algorithm.	
• Led a 4-person multidisciplinary team to achieve 3,600+ viewers on YouTube streaming and coordinated the development of a real-time game analysis system with live streaming capabilities	

EXTRACURRICULAR EXPERIENCE

Reception Team Leader of the University of Melbourne Customized Chinese Program	<i>Jun 2024 - Jul 2024</i>
• Coordinated welcome and farewell events for 20+ international students and managed a 10-member reception team	
Intercultural Student Volunteer (ISV)	<i>Mar 2023 - Mar 2025</i>
• Cooperated with colleagues for multimedia content showcasing Taiwanese culture for 3000+ visiting students	
NCKU Baseball Team	<i>Jul 2022 - Jun 2025</i>
• Arranged infielder training sessions for 6 infielders and facilitated communication with 4 coaching team members	
• Contributed to the team's 5th place finish in the University Baseball League (2024, 2025)	

SKILLS

Programming Languages: Python, C, C++
Frameworks: PyTorch, CUDA, OpenCV, ROS, YOLOv7, MediaPipe, Git, Linux