

Chen-Chieh (Jacky) Liao

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Affiliation

Institute of Science Tokyo , Tokyo, Japan <i>Postdoctoral Researcher</i>	<i>Apr 2025 – Current</i>
Cygames, Inc. , Tokyo, Japan <i>Associate Researcher</i>	<i>Jan 2024 – Current</i>
Rinji Advice Co., Ltd. , Tokyo, Japan <i>Data Scientist</i>	<i>Feb 2022 – Current</i>

Education

Institute of Science Tokyo , Tokyo, Japan <i>Ph.D. in Computer Science</i>	<i>Apr 2022 – Mar 2025</i>
Tokyo Institute of Technology , Tokyo, Japan <i>M.S. in Computer Science</i>	<i>Apr 2020 – Mar 2022</i>
Tokyo Institute of Technology , Tokyo, Japan <i>B.E. in Computer Science</i>	<i>Apr 2016 – Mar 2020</i>
<ul style="list-style-type: none">➤ Overall Average Score: 95.33/100, Major Average Score: 96.56/100➤ Relevant Course: System Programming, Computer Networks, Databases, Data Structures and Algorithms, Object-Oriented Programming	
ETH Zürich , Zürich, Switzerland <i>Exchange Program in Department of Computer Science</i>	<i>Sep 2018 – Aug 2019</i>
<ul style="list-style-type: none">➤ Relevant Course: Reliable and Interpretable Artificial Intelligence, Probabilistic Artificial Intelligence	

Research Experience

KMD , Keio University <ul style="list-style-type: none">➤ Supervisor: Prof. Kai Kunze➤ Research on Sensing and Vocal Training	<i>Spring 2023 – Mar 2025</i>
Koike Laboratory , Tokyo Institute of Technology <ul style="list-style-type: none">➤ Supervisor: Prof. Hideki Koike➤ Research on Machine Learning and Motor Skill Training System	<i>Spring 2022 – Mar 2025</i>
Koike Laboratory , Tokyo Institute of Technology <ul style="list-style-type: none">➤ Supervisor: Prof. Hideki Koike➤ Researched on Machine Learning and Computer Vision➤ Master Thesis: A study of comparative analysis for sports motion	<i>Spring 2020 – Spring 2022</i>

Koike Laboratory, Tokyo Institute of Technology *Fall 2019 – Spring 2020*

- Supervisor: [Prof. Hideki Koike](#)
- Researched on Human-Computer Interaction and Haptics
- Bachelor Thesis: Realtime center of mass adjustment system for a golf club

Computational Robotics Lab, ETH Zürich *Spring 2019*

- Supervisor: [Prof. Stelian Coros](#)
- Researched on Computer Graphics, Virtual Reality, Robotics and Fabrication
- Bachelor Thesis: VR Viewarm system for robotic teleoperation

Photogrammetry and Remote Sensing, ETH Zürich *Spring 2019*

- Supervisor: [Prof. Konrad Schindler](#)
- Researched on Computer Vision, Object Tracking and 3D Reconstruction
- Served as Research Assistant working on drone detection and tracking [[Link](#)]

Miyazaki Laboratory, Tokyo Institute of Technology *Spring 2018*

- Supervisor: [Prof. Jun Miyazaki](#)
- Researched on Deep Mining and Information Recommendation
- Literature review and implementation on Fast Data Mining Algorithms topics

Miyake Laboratory, Tokyo Institute of Technology *Spring 2018*

- Supervisor: [Prof. Yoshihiro Miyake](#)
- Researched on Co-Creation System and Virtual Reality
- Replication of experimental research on VR (e.g., Out-of-Body Experiences)

Publications

- **Chen-Chieh Liao**, Takuto Nakamura, Hideki Koike, “Realtime Center of Mass Adjustment via Weight Switching Device inside a Golf Putter”, in CHI 2020. [[Link](#)]
- **Chen-Chieh Liao**, Dong-Hyun Hwang, Hideki Koike, “How Can I Swing Like Pro? Golf Swing Analysis Tool for Self Training”, in SIGGRAPH Asia 2021. [[Link](#)]
- **Chen-Chieh Liao**, Haruki Kikuchi, Dong-Hyun Hwang, Hideki Koike, “Virtual Club Shadow: A Real-time Projection of Golf Club Trajectory”, in ISMAR 2022. [[Link](#)]
- Erwin Wu, **Chen-Chieh Liao**, Ruofan Liu, Hideki Koike, “Context-aware Risk Degree Prediction for Smartphone Zombies”, in SIGGRAPH 2022. [[Link](#)]
- Ruofan Liu, Erwin Wu, **Chen-Chieh Liao**, Hayato Nishioka, Shinichi Furuya, Hiedeki Koike, “Synchronized Hand Difference Visualization for Piano Learning”, in SIGGRAPH 2022. [[Link](#)]
- **Chen-Chieh Liao**, Dong-Hyun Hwang, Hideki Koike, “AI Golf: Golf Swing Analysis Tool for Self-Training”, in IEEE ACCESS 2022. [[Link](#)]
- **Chen-Chieh Liao**, Dong-Hyun Hwang, Erwin Wu, Hideki Koike, “AI Coach: A Motor Skill Training System using Motion Discrepancy Detection”, in AHs 2023. [[Link](#)]
- Ruofan Liu, Erwin Wu, **Chen-Chieh Liao**, Hayato Nishioka, Shinichi Furuya, Hiedeki Koike, “PianoHandSync: An Alignment-based Hand Pose Discrepancy Visualization

- System for Piano Learning”, in CHI 2023. [\[Link\]](#)
- Makito Kobayashi, **Chen-Chieh Liao**, Keito Inoue, Sentaro Yojima, Masafumi Takahashi “Motion Capture Dataset for Practical Use of AI-based Motion Editing and Stylization”, in arXiv 2023. [\[Link\]](#)
 - **Chen-Chieh Liao**, Jong-Hwan Kim, Hideki Koike, Dong-Hyun Hwang, “Content-Preserving Motion Stylization using Variational Autoencoder”, in SIGGRAPH 2023. [\[Link\]](#)
 - Yasheng Sun, Qianyi Wu, Hang Zhou, Kaisiyuan Wang, Tianshu Hu, **Chen-Chieh Liao**, Shio Miyafuji, Ziwei Liu, Hideki Koike, “Make your brief stroke real and stereoscopic: 3D-aware simplified sketch to portrait generation”, in ICMI 2023. [\[Link\]](#)
 - Ruofan Liu, Erwin Wu, **Chen-Chieh Liao**, Hayato Nishioka, Shinichi Furuya, Hideki Koike, “PianoSyncAR: Enhancing piano learning through visualizing synchronized hand pose discrepancies in augmented reality”, in ISMAR 2023. [\[Link\]](#)
 - Erwin Wu, Takashi Matsumoto, **Chen-Chieh Liao**, Ruofan Liu, Hidetaka Katsuyama, Yuki Inaba, Noriko Hakamada, Yusuke Yamamoto, Yusuke Ishige, Hideki Koike, “SkiTech: An Alpine Skiing and Snowboarding Dataset of 3D Body Pose, Sole Pressure, and Electromyography”, in MMSports 2023. [\[Link\]](#)
 - Takashi Matsumoto, Erwin Wu, **Chen-Chieh Liao**, Hideki Koike, “ARpenSki: Augmenting Ski Training with Direct and Indirect Postural Visualization”, in IEEE VR 2024. [\[Link\]](#)
 - Kanyu Chen, Erwin Wu, Daichi Saito, Yichen Peng, **Chen-Chieh Liao**, Akira Kato, Hideki Koike, Kai Kunze, “Novel Sensing Methods for Vocal Technique Analysis: Evaluation on Electromyography and Ultrasonography”, ISMAR 2024. [\[Link\]](#)
 - Kyohei Hayakawa, **Chen-Chieh Liao**, Hideki Koike, “Diffusion-Based Synthetic Dataset Generation for Egocentric 3D Human Pose Estimation”, in ECCV 2024. [\[Link\]](#)
 - **Chen-Chieh Liao**, Zhihao Yu, Hideki Koike, “ShiftingGolf: Gross Motor Skill Correction Using Redirection in VR”, in IEEE VR 2025. [\[Link\]](#)
 - Ruofan Liu, Yichen Peng, Takanori Oku, **Chen-Chieh Liao**, Erwin Wu, Shinichi Furuya, Hideki Koike, “PiaMuscle: Improving Piano Skill Acquisition by Cost-effectively Estimating and Visualizing Activities of Miniature Hand Muscles”, in CHI 2025. [\[Link\]](#)

Teaching Experience

Teaching Assistant, *Data Structures and Algorithms* [\[Link\]](#)

Dec 2019 – Feb 2020

Dec 2021 – Feb 2022

Teaching Assistant, *Information Literacy 1 & 2* [\[Link\]](#)

Apr 2020 – Aug 2020

Apr 2021 – Aug 2021

Teaching Assistant, *Computer Science I & II* [[Link](#)]

Apr 2022 – Aug 2022

Sep 2020 – Feb 2021

Sep 2021 – Feb 2022

Work Experience

ACES, Tokyo, Japan

July 2022 – Feb 2024

Algorithm Engineer

- Algorithm design for danger detection on actual construction sites
- Implementation of state-of-the-art Motion Transfer Learning algorithms on industrial datasets

Naver Cloud, Seongnam, South Korea

Dec 2022 – Mar 2023

AI Researcher

- Work on motion style transfer for 3D character animation and game
- Proposed a novel motion style transfer network using variational autoencoders.
- The project was recognized and accepted at SIGGRAPH 2023

Skills

Programming:

- C/C++, Java, JavaScript, Python, Matlab, Scheme

Software/Toolkit:

- PyTorch, TensorFlow, OpenCV, OpenGL, OpenVR, Unity, Arduino, Git, Docker

Language:

- Mandarin (Native)
- English (Proficient, TOEIC 970/990)
- Japanese (Proficient, JLPT N1 178/180)

Honors & Scholarships

- Heyning-Roelli Foundation, \$3,150 USD, *Sep 2018*
- Tokyo Institute of Technology Fund, \$3,600 USD, *Sep 2018*
- Moritani Foundation, \$43,200 USD, 1% of 1000+ applicants, *Apr 2017 and Apr 2020*
- Monbukagakusho Honors Scholarship, \$11,500 USD, *Apr 2015 and Apr 2016*
- Japanese Government (MEXT) Scholarship, \$25,000 USD, *Apr 2022*
- Japan Society for the Promotion of Science (JSPS) Research Fellowship, \$60,000 USD, *Apr 2023*