I-Chun (Arthur) **Liu**

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Education

University of Southern California   *August 2023 -*
DOCTOR OF PHILOSOPHY, COMPUTER SCIENCE (ROBOTICS & AI)   *Los Angeles, CA*

University of Southern California   *Jan. 2021 - May 2023*
MASTER OF SCIENCE, COMPUTER SCIENCE   *Los Angeles, CA*

University of California, Los Angeles   *October 2014 - June 2016*
MASTER OF SCIENCE, COMPUTER SCIENCE   *Los Angeles, CA*

University of Wisconsin–Madison   *September 2010 - May 2014*
BACHELOR OF SCIENCE, COMPUTER SCIENCE   *Madison, WI*

Publications

[1] Gautam Salhotra*****, **I-Chun Arthur Liu***, and Gaurav S. Sukhatme. Learning Robot Manipulation from Cross-Morphology Demonstration. In *Conference on Robot Learning (CoRL)*, 2023. Website.

[2] Gautam Salhotra*****, **I-Chun Arthur Liu***, Marcus Dominguez-Kuhne, and Gaurav S. Sukhatme. Learning Deformable Object Manipulation from Expert Demonstrations. In *IEEE Robotics and Automation Letters (RA-L)* and *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2022. Website.

[3] **I-Chun Arthur Liu***, Shagun Uppal*****, Gaurav S. Sukhatme, Joseph J. Lim, Peter Englert, and Youngwoon Lee. Distilling Motion Planner Augmented Policies into Visual Control Policies for Robot Manipulation. In *Conference on Robot Learning (CoRL)*, 2021. Website.

[4] **I-Chun Arthur Liu**, Chien-Yao Wang, Jiun-Wei Chen, Wei-Chi Li, Feng-Chi Chang, Yi-Chung Lee, Yi-Chu Liao, Chih-Ping Chung, Hong-Yuan Mark Liao, and Li-Fen Chen. 3D Instance Segmentation Framework for Cerebral Microbleeds using 3D Multi-Resolution R-CNN. *Under review*.

* indicates equal contribution.

Research Experience

Amazon Robotics   *May 2023 - August 2023*
APPLIED SCIENTIST INTERN   *MA, United States*
- Targeted bin picking research (robotic manipulation).

University of Southern California, Robotics Embedded Systems Laboratory (RESL)   *January 2021 - May 2023*
RESEARCH ASSISTANT (PART-TIME, PAID POSITION). ADVISED BY PROF. GAURAV SUKHATME.   *Los Angeles, CA, United States*
- My research interests were in deep reinforcement learning, vision, and sim-to-real transfer for robotics.
- Published three papers (CoRL 2021, RA-L + IROS 2022, CoRL 2023) as first author.

Academia Sinica (Institute of Information Science), Multimedia Technologies Laboratory   *January 2019 - December 2020*
RESEARCH ASSISTANT (FULL-TIME, PAID POSITION). ADVISED BY PROF. HONG-YUAN MARK LIAO AND PROF. LI-FEN CHEN.   *Taipei, Taiwan*
- Conducted research on computer vision in topics including object detection and instance segmentation.
- Proposed 3D Multi-Resolution R-CNN, the first end-to-end 3D instance segmentation framework for cerebral microbleeds using Susceptibility Weighted Imaging (Preprint).

Achievements

2023 - USC 1-Year Fellowship, University of Southern California - Viterbi School of Engineering (awarded to selected PhD students).

2023 - Computer Science Best Research Award, University of Southern California - Viterbi School of Engineering (MS Award).

2016 - PlacetoStudy Featured in The Daily Bruin Newspaper, A website that helped students find good locations for studying around campus.

Service

Reviewer   CoRL 2022, 2023
Instructor   After-School Computer Science Club (K-12), Spring 2014, Madison, WI

Skills

Languages   Native: Mandarin Chinese. Fluent: English.
Programming   Proficient in Python, PyTorch, LaTeX; prior experience with C/C++, JavaScript, Java.

Work Experience

Appier
October 2017 - April 2018

SOFTWARE ENGINEER, FRONTEND
Taipei, Taiwan

- Maintained and developed new features for dynamic creatives generator tool using React, Redux, JavaScript, and CSS.
- Designed and built dynamic creative templates with logo rotation, promotional banner rotation, customized fields that can parse any catalog field from data feed, and discount tags.

Mozilla (Firefox DevTools Debugger)
November 2016 - November 2017

OPEN SOURCE CONTRIBUTOR
GitHub

- Made 35 contributions, from small UI fixes to significant features, to Firefox's new DevTools Debugger, which is written in React and Redux.
- Added save tabs and save breakpoints, two features that let users persist Debugger state across sessions. The features required saving Debugger state to Local Storage as user navigated sources and added and removed breakpoints.

National Development Council
August 2016 - August 2017

FOREIGN LANGUAGE SPECIALIST — CONSCRIPT
Taipei, Taiwan

- Translated social/cultural development policy documents from and into Chinese and English.

Side Projects

Place to Study
June 2016 - November 2016

INDEPENDENT PROJECT
Los Angeles, CA

- Designed website (Place to Study) for students to find locations to study around campus, which had three main features: search UI for discovering locations, CMS for adding and reviewing new locations, and ratings and review system.

Master's Capstone Project (UCLA)
June 2015 - June 2016

INDEPENDENT PROJECT
Los Angeles, CA

- Designed a platform to connect businesses to their customers. The platform consisted of two applications: a web CMS for businesses to manage their store information and promotions, where updates to this information would alert their customers, and an iOS app for customers that provided easier access to their favorite stores.