

SIRUI CHEN

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EDUCATION

Stanford University, USA

August 2023 - Sept 2027(Expected)

Doctor of Philosophy

cGPA: 4.0/4.0

Department of Computer Science

Research Area: Robotics, Humanoid Robot, Dexterous Manipulation.

Stanford University, USA

August 2023 - June 2026

Master of Science

cGPA: 4.0/4.0

Department of Computer Science

Research Area: Robotics, Humanoid Robot, Dexterous Manipulation.

The University of Hong Kong, HKSAR

August 2018 - June 2023

Bachelor of Engineering

First-class Honor

Department of Computer Science

4-year Full Entrance Scholarship.

Arthur and Louise May Scholarship 2022,2023.

Dean's Honours List

University of Illinois at Urbana-Champaign

Jan 2021 - June 2021

Bachelor of Engineering, Exchange

sGPA: 4.0/4.0

Department of Computer Science

RESEARCH INTERESTS

I am interested in solving the problem of contact-rich dexterous manipulation and humanoid loco-manipulation both from analytical modeling and learning from human demonstration perspectives.

PUBLICATION

SceneBot: Contact-Prompted General Humanoid Whole Body Tracking with Scene-Interaction

Author: Sirui Chen, Shibo Zhao, Zhen Wu, Jiaman Li, Guanya Shi, C.Karen Liu

In submission 2026

VLK: Learning Humanoid Loco-Manipulation from Synthetic Interactions in Reconstructed Scenes

Author: Yen-Jen Wang, Jiaman Li, Sirui Chen, Takara Truong, Pei Xu, Pieter Abbeel, Rocky Duan, Koushil Sreenath, Angjoo Kanazawa, Carmelo Sferrazz, Guanya Shi, C. Karen Liu

Accepted to CoRL 2026

Ego-Pi: VLA Fine-Tuning for Ego-Centric Human and Robot Data

Author: Jiwoong Kim, Ke Wang, Sirui Chen, Zipeng Fu, Cong Zhao, Jeff Lai, Chelsea Finn

Accepted to CVPR Findings 2026

CHIP: Adaptive Compliance for Humanoid Control through Hindsight Perturbation

Author: Sirui Chen, Zi-ang Cao, etc., C. Karen Liu, Yuke Zhu

Accepted to CoRL 2026

SONIC: Supersizing Motion Tracking for Natural Humanoid Whole Body Control

Author: Zhengyi Luo, Ye Yuan, Tingwu Wang, Chengran Li, Sirui Chen, etc., Yuke Zhu

Accepted to Science Robotics 2026

Hand-Eye Autonomous Delivery: Learning Humanoid Navigation, Locomotion and Reaching

Author: Sirui Chen, Yufei Ye, Zi-Ang Cao, Jennifer Lew, Pei Xu, C. Karen Liu

Accepted to CoRL 2025

GeoDEx: A Unified Geometric Framework for Tactile Dexterous and Extrinsic Manipulation under Force Uncertainty

Author: Sirui Chen, Sergio Francisco Aguilera Marinovic, Soshi Iba, Rana Soltani Zarrin

Accepted to RSS 2025

ARCap: Collecting High-quality Human Demonstration for Robot Learning using Augmented Reality Feedbacks

Author: Sirui Chen*, Chen Wang*, Kaden Nguyen, Li Fei-Fei, C. Karen Liu

Accepted to ICRA 2025

One-Shot Transfer of Long-Horizon Extrinsic Manipulation Through Contact Retargeting

Author: Albert Wu, Ruocheng Wang, Sirui Chen, Clemens Eppner, C Karen Liu

Accepted to IROS 2024 (Oral)

SpringGrasp: Synthesizing Compliant, Dexterous Grasps under Shape Uncertainty

Author: Sirui Chen, Jeannette Bohg, C. Karen Liu

Accepted to RSS 2024

Synthesizing Dexterous Nonprehensile Pregrasp for Ungraspable Objects

Author: Sirui Chen, Albert Wu, C. Karen Liu

Accepted to ACM SIGGRAPH Proceedings 2023.

DiffSRL: Learning Dynamical State Representation for Deformable Object Manipulation with Differentiable Simulation

Author: Sirui Chen*, Yunhao Liu*, Shangwen Yao, Jialong Li, Tingxiang Fan, Jia Pan

Accepted to IEEE-RAL Volume 7 Issue 4 2022

Realtime Model Predictive Control and System Identification with Differentiable Physics Simulation.

Author: Sirui Chen, Keenon Werling, Albert Wu, C. Karen Liu

Accepted to IEEE-RAL Volume 8 Issue 1 2023 and presented at ICRA 2023

Community Evolution Forecasting with Graph Temporal Point Process

Author: Xuhong Wang*, Sirui Chen*, Yixuan He, Minjie Wang, Junchi Yan, Quan Gan

Accepted to LoG 2022

PATENT

Robotic manipulator and systems and methods of control

Author: Sirui Chen, Rana Soltani Zarrin

US Patent App. 19/330,181, 2026

RESEARCH EXPERIENCE

Amazon.com LLC, Frontier AI & Robotics, 2026.1-Present
Humanoid foundation model, Applied Scientist Intern
Supervisor: Dr. C. Karen Liu and Dr. Guanya Shi

Responsibility: Worked on humanoid whole body control, build foundation model for humanoid low-level control and high-level planning.

Nvidia Research, GEAR Group, 2025.6-2025.12
compliant humanoid whole body control, Research Intern
Supervisor: Dr. Yuke Zhu

Responsibility: Worked on humanoid whole body control, build task space impedance controller for humanoid robot using RL.

Honda Research Institute, pHRI Group, 2024.6-2024.9
Tactile enabled dexterous and extrinsic manipulation, Research Intern
Supervisor: Dr. Rana Soltani Zarrin

Responsibility: Worked on dexterous and extrinsic manipulation with tactile sensor, built a theoretical framework for estimating useful sensor information from noisy sensor input and robust force trajectory planning.

Stanford University, The Movement Lab, 2021.4-2022.9
Physics based character animation, Research Assistant
Supervisor: Professor Karen Liu

Research Field: Character animation, Physics Simulation, Human Computer Interaction.

Responsibility: Core member of Differentiable simulation engine Nimblephysics R&D team, working on two individual research projects on contact planning for real-time system identification for adaptive control (Accepted to IEEE-RAL) and dexterous non-prehensile manipulation (submitted to SIGGRAPH).

HKU Robotics Lab, Hong Kong, 2020.6-2021.12
Differentiable Simulation and Control, Research Assistant
Supervisor: Dr. Jia Pan

Research Field: Robotics, Computer Graphics

Responsibility: Design and analyse model-based RL algorithms with differentiable simulator for deformable object manipulation. Participated in a independent project on dynamical state representation learning using differentiable simulation (Accepted by IEEE-RAL).

AWS AI Lab, Shanghai, 2020.12-2021.6
Dynamic Deep Graph Network, Research Intern
Supervisor: Professor Zheng Zhang, Professor Junchi Yan

Research Field: Graph Neural Network

Responsibility: Member of research project temporal network analysis, implement and improve SOTA temporal and dynamic graph neural network models into Deep Graph Library(DGL). Working on relational sequence forecasting task with deep model for tem-

poral network. One co-first authored paper under submission to a conference requires blind review.

HKU Robotics Lab, Hong Kong, 2019.9 - 2020.6

ICRA Autonomous Multi-Agent Robot System Challenge, Technical Leader

Supervisor: Dr. Kenneth Wong, Dr. Jia Pan

Region: Deep Reinforcement Learning, Robotics, Multi-Agent System

Responsibility: Lead a team of 12 build a multi-agent system to attend ICRA AI Challenge. Build a decision making frame work using MA-TD3 with league training scheme. Design and improved RVO Multi-Agent collision avoidance algorithm for multi-agent navigation. Won Excellent Award in Navigation. Rank: 10/80+ teams.

OPEN SOURCE CONTRIBUTIONS

GEAR-WholeBodyControl, Core contributor

State-of-the-art multimodal humanoid whole body control system.

Project Link: <https://github.com/NVlabs/GR00T-WholeBodyControl>

ARCap: Portable human mocap system for collecting robot learning data, Creator

Developing a Unity App that can collect high-quality human demonstration for robot learning using augmented reality feedbacks.

Project Link: <https://stanford-tml.github.io/ARCap>

Nimblephysics: differentiable physics simulator, Core Development member

Developing real-time MPC module and system identification module on nimblephysics for robot control, as well as developing ROS python interface between nimblephysics and robot arm.

Project Link: <https://nimblephysics.org/>

Deep Graph Library(DGL), Development team member

Reproduce multiple research paper on temporal dynamical graph using DGL, as well as help the team to improve sampling efficiency dedicated for continuous temporal dynamical graph.

Project Link: <https://www.dgl.ai/>

AWARDS & SCHOLARSHIP

Full HKU Entrance Scholarship 2018-2023

Awarded to top student admitted to HKU via National College Entrance Exam

Arthur and Louise May Memorial Fund Scholarship 2022

The Scholarship is awarded to outstanding engineering students under 35 years of age to participate in the Advanced Robotics Initiative research project

RoboMaster Sim2Real Challenge 2022, First Prize, 2/40 teams

National robotics competition held by IEEE Conference of Games, DJI and Chinese Academy of Science 2/40 teams

RoboMaster ICRA AI Challenge 2020, Excellent Award in Navigation

International robotics competition held by DJI and ICRA 10/80+ teams

Dean's Honour List, 2018-2019, 2020-2021
Awarded to top student based on exam result.

TECHNICAL STRENGTHS

Tools:	ROS, Pytorch, Blender, OpenCV, Tensorflow, DGL, Git, Latex, Sh
Programming Languages:	Python(Advanced),C++/C(Advanced),Java(Intermediate), R(Intermediate), MATLAB(Intermediate)