Boyuan Chen

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EDUCATION

Massachusetts Institute of Technology (MIT), PhD student in EECS *2021 - Present*
UC Berkeley, BA Computer Science (EECS Honor Class), Applied Math, Class of 2021, GPA 3.96 *2017-2021*

Selected Coursework: Deep Unsupervised Learning(A+), Deep Reinforcement Learning(A+), Advanced Robotics(A+), Natural Language Processing(A), Machine Learning(A), Computer Vision(A), AI System(A+), Hardware for Deep Learning(A), Robotics(A+), Real Analysis(A+), Complex Analysis(A+), Algorithms(A), Data Structure(A), Computer Program(A+), Computer Architecture(A), Stochastic Process & Probability(A)

EXPERIENCE

Google Deepmind
Machine Learning Researcher *May 2023 – Aug 2023*
- Lead the training of a multi-modal Large Language Model (26B and 66B parameters)
- Self-improvement with synthetic data, Instruction tuning, Visual grounding

Google X (or X, the Moonshot Factory)
AI resident, machine learning for robotics (with return offer at Google's L4 level but declined) *May 2022 – Aug 2022*
- Develop machine learning algorithms for sequential decision making in robotics
- Visual grounding for Large Language Model

MIT Computer Science and Artificial Intelligence Laboratory (CSAIL)
Researcher *Sep 2021 – present*
- Machine learning for robotics advised by Prof. Russ Tedrake and Prof. Vincent Sitzmann

Berkeley Artificial Intelligence Research Lab
Researcher *Jan 2019 – Aug 2021*
- Computer vision research Prof. Trevor Darrell; Robotics learning research with Prof. Pieter Abbeel,
- Student researcher on unsupervised learning, 3d vision, visual reinforcement learning and generalizable manipulation.

Robomooc.com, Chongqing Muke Robotics Inc.
Startup Founder *Nov 2017 – Mar 2020*
- Company providing robotics education solution to K12 education
- Lead the software and hardware development of robot kits that we sell to student participants in robotics competitions

Robomaster at Berkeley (Robotics Team & Club)
Founder, Captain *Oct 2018 –2021*
- Lead 20-member robotics team building autonomous shooting robots for ICRA RoboMaster AI Challenge
- Designed and implemented novel methods for data collection, object detection and inference acceleration

Open Source Project Contributor
- Contributor of DL Framework Pytorch, Torchvision; Physics Engine Bullet3; Robotics framework Drake *2018 –2021*

MIT Chess club
- Executive at MIT Chess Club *2021 - present*
- Team member of MIT in collegiate chess league

SKILLSET

Language & Tools: Python, C++/C, Java, Cmake, ROS, NVIDIA Isaac, PyTorch, Tensorflow, OpenVino, TensorRT, ZeroMQ, Qt5, AWS
Algorithms: Computer Vision, Machine Learning, Reinforcement Learning, Path Planning, Kinematics, PID, Dynamics Programming

PUBLICATION

Open-vocabulary Queryable Scene Representations for Real World Planning *2020 - 2021*
B. Chen, F. Xia, B. Ichter, K. Rao, K. Gopalakrishnan, M. Ryoo, A. Stone, D. Kappler. In submission to ICRA 2023

Model-free Reinforcement Learning that Transfers Using Random Reward Features *2021-2022*
B. Chen, C. Zhu, P. Agrawal, K. Zhang, A. Gupta. In submission to ICLR 2023

Extraneousness-Aware Imitation Learning *2021-2022*
R. Zheng, K. Hu, B. Chen, H. Xu. In submission to Neurips 2023

Unsupervised 3d Keypoint Learning for control

B. Chen, D. Pathak, P. Abbeel. Accepted to ICML 2021.

Zero-shot Policy Learning with Spatial Temporal Reward Decomposition on Contingency-aware Observation *2019 - 2020*

B. Chen*, H. Xu*, Y. Gao, T. Darrell. Accepted to ICRA 2021

Discovering Diverse Multi-Agent Strategic Behavior via Reward Randomization *2019 - 2020*

Z. Tang, C. Yu, B. Chen, H. Xu, X Wang, F. Fang, S. Du, Y. Wang, Y. Wu. Accepted to ICLR 2021

ACADEMIC SERVICE

Reviewer of CVPR 2023, IROS 2022 *Feb 2021*

Teaching Assistant, MIT 6.4210/6.4212 Robotic Manipulation *Sep 2022 – Dec 2022*

PERSONAL PROJECTS

Autonomous multi-floor food delivery robot (Control, Planning, Sensing, Vision, ROS) *Sep 2019 - Dec 2019*

ICRA Robomaster AI Challenge Autonomous Combat Robot (Vision, Planning, ROS, Control, AI) *Jan 2019 - May 2019*

Personal drivable RC robot (CAD, Manufacture, Electronics, Control, Embedded System) *May 2019 - Aug 2019*

Autonomous Multi-Terrain Rover (CAD, Manufacture, Electronics, Computer Vision, Planning) *Oct 2017 - Aug 2018*

Autonomous Tracking Drone (Computer Vision, Embedded System) *Sep 2016 - Aug 2017*

HONOR

Seneff-Zue CS Fellowship *Feb 2021*

Winner, Facebook Pytorch Summer Hackathon *Aug 2019*

Finalist, ICRA 2019 Robomaster AI Challenge *May 2019*

Winner, Record Keeper, UC Berkeley CS 61C Neural Network Inference Optimization Contest *Aug 2018*

Winner, CS170 Efficient Algorithms Contest *Oct 2018*

2nd place, Google Puzzlehunt, second fastest prize eligible team out of 800+ teams of Google employees *Jul 2022*

Honor degree in EECS, High honor in general scholarship, Dean's List, UC Berkeley *2017-2021*