

Boyuan Chen

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EDUCATION

Massachusetts Institute of Technology (MIT), PhD student in EECS, MIT CSAIL 2021 - 2025
UC Berkeley, BA Computer Science (EECS Honor Class), Applied Math, Class of 2021, GPA 3.96 2017-2021

Research Interest: Generative world model, Model-based reinforcement learning, Foundation models for decision making

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), Programming(A+), Computer Architecture(A), Stochastic Process & Probability(A)

EXPERIENCE

OpenAI

Member of Technical Staff (Research) Jun 2025 - present

- Member of the 5-people core research team of GPT image generation
- Reinforcement learning and world models

Google DeepMind

Research Intern May 2023 - Aug 2023

- Lead the training of a multi-modal Large Language Model (MLLM) with large scale synthetic data.
- Implemented the entire data synthesis pipeline, instruction tuning that was later adopted into Gemini 2.0.

Google X (or X, the Moonshot Factory)

AI resident (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 research advised by Prof. Vincent Sitzmann and Prof. Russ Tedrake
- Research focus: Generative world model, Model-based RL, Foundation models for decision making, Robotics.

Berkeley Artificial Intelligence Research Lab

Researcher Jan 2019 - Aug 2021

- Reinforcement learning research with Prof. Pieter Abbeel; Computer vision research Prof. Trevor Darrell
- 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

SKILLSET

Language & Tools: Python, C++/C, Java, PyTorch, Tensorflow, Jax, Pax, Flume, OpenCV, MongoDB, TensorRT, ZeroMQ, Qt5

Machine Learning: Deep Reinforcement Learning, Generative Models (Diffusion, Flow, GAN, VAE), Variational Inference, Time Series Prediction, Planning Imitation Learning, World Model, Large Language Model, Multimodal Model, Data Synthesis.

PUBLICATION

Diffusion Forcing: Next-token Prediction Meets Full-Sequence Diffusion NeurIPS 2024

[B. Chen](#), D. Monso, Y. Du, M. Simchowitz, R. Tedrake, V. Sitzmann. (Used by Adobe Firefly)

Spatial VLM: Endowing Vision-Language Models with Spatial Reasoning Capabilities CVPR 2024

[B. Chen](#), Z. Xu, S. Kirmani, B. Ichter, D. Driess, P. Florence, D. Sadigh, L. Guibas, F. Xia (Used by Gemini 2.0)

Self-Supervised Reinforcement Learning that Transfers using Random Features NeurIPS 2023

[B. Chen](#), C. Zhu, P. Agrawal, K. Zhang, A. Gupta

History Guided Video Diffusion ICML 2025

K. Song*, [B. Chen](#)*, M. Simchowitz, Y. Du, R. Tedrake, V. Sitzmann. (*Equal Contribution)

Open-vocabulary Queryable Scene Representations for Real World Planning ICRA 2023

[B. Chen](#), F. Xia, B. Ichter, K. Rao, K. Gopalakrishnan, M. Ryoo, A. Stone, D. Kappler (Patented w/ Google)

Unsupervised 3d Keypoint Learning for control ICML 2021

<u>B. Chen</u> , D. Pathak, P. Abbeel.	
Discovering Diverse Multi-Agent Strategic Behavior via Reward Randomization	ICLR 2021
Z. Tang, C. Yu, <u>B. Chen</u> , H. Xu, X Wang, F. Fang, S. Du, Y. Wang, Y. Wu	
DittoGym: Learning to Control Soft Shape-Shifting Robots	ICLR 2024
S. Huang, <u>B. Chen</u> , H. Xu, V. Sitzmann	
Reasoning or Reciting? Exploring the Capabilities and Limitations of LLM Through Counterfactual Task	NAACL 2024
Z. Wu, L. Qiu, A. Ross, E. Akyürek, <u>B. Chen</u> , B. Wang, N. Kim, J. Andreas, Y. Kim	
Extraneousness-Aware Imitation Learning	ICRA 2023
R. Zheng, K. Hu, <u>B. Chen</u> , H. Xu.	
Zero-shot Policy Learning with Spatial Temporal Reward Decomposition on Contingency-aware Observation	ICRA 2020
<u>B. Chen</u> *, H. Xu*, Y. Gao, T. Darrell.	
Unifying 3D Representation and Control of Diverse Robots with a Single Camera	Nature
S. Lester Li, A. Zhang, <u>B. Chen</u> , H. Matusik, C. Liu, D. Rus, V. Sitzmann	

ACADEMIC SERVICE

Reviewer of NeurIPS, ICLR, ICML, CVPR, RSS, ICRA, IROS, RAL, AAAI	<i>2021-present</i>
Teaching Assistant, MIT 6.S183 Diffusion Models, 6.4210/6.4212 Robotic Manipulation	<i>Sep 2022 – Dec 2022</i>

PERSONAL PROJECTS

Autonomous multi-floor food delivery robot (Control, Planning, Sensing, Vision, ROS)	<i>Sep 2019 - Dec 2019</i>
ICRA Robomaster AI Challenge Autonomous Combat Robot (Vision, Planning, ROS, Control, AI)	<i>Jan 2019 - May 2019</i>
Personal drivable RC robot (CAD, Manufacture, Electronics, Control, Embedded System)	<i>May 2019 - Aug 2019</i>
Autonomous Multi-Terrain Rover (CAD, Manufacture, Electronics, Computer Vision, Planning)	<i>Oct 2017 - Aug 2018</i>
Autonomous Tracking Drone (Computer Vision, Embedded System)	<i>Sep 2016 - Aug 2017</i>

HONOR

Seneff-Zue CS Fellowship	<i>Feb 2021</i>
Winner, Facebook Pytorch Summer Hackathon	<i>Aug 2019</i>
Finalist, ICRA 2019 Robomaster AI Challenge	<i>May 2019</i>
Winner, Record Keeper, UC Berkeley CS 61C Neural Network Inference Optimization Contest	<i>Aug 2018</i>
Winner, CS170 Efficient Algorithms Contest	<i>Oct 2018</i>
2 nd place, Google Puzzlehunt, second fastest prize eligible team out of 800+ teams of Google employees	<i>Aug 2022</i>
Honor degree in EECS, High honor in general scholarship, Dean’s List, UC Berkeley	<i>2017-2021</i>