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*
- Core member of the research team behind GPT image generation
- One of the few research members who trained GPT Image 1.5

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

Large Video Planner Enables Generalizable Robot Control **Arxiv 2025**
B. Chen*, T. Zhang*, H. Geng*, K. Song, C. Zhang, P. Li, W. T. Freeman, J. Malik, P. Abbeel, R. Tedrake, V. Sitzmann, Y. Du. (*Equal Contribution)

Diffusion Forcing: Next-token Prediction Meets Full-Sequence Diffusion **NeurIPS 2024**
B. Chen, D. Monso, Y. Du, M. Simchowitz, R. Tedrake, V. Sitzmann.

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

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

Unsupervised 3d Keypoint Learning for control **ICML 2021**
B. Chen, D. Pathak, P. Abbeel.

Discovering Diverse Multi-Agent Strategic Behavior via Reward Randomization **ICLR 2021**
Z. Tang, C. Yu, B. Chen, H. Xu, X Wang, F. Fang, S. Du, Y. Wang, Y. Wu

DittoGym: Learning to Control Soft Shape-Shifting Robots **ICLR 2024**
S. Huang, B. Chen, 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, B. Chen, B. Wang, N. Kim, J. Andreas, Y. Kim

Extraneousness-Aware Imitation Learning **ICRA 2023**
R. Zheng, K. Hu, B. Chen, H. Xu.

Zero-shot Policy Learning with Spatial Temporal Reward Decomposition on Contingency-aware Observation **ICRA 2020**
B. Chen*, H. Xu*, Y. Gao, T. Darrell.

Unifying 3D Representation and Control of Diverse Robots with a Single Camera **Nature**
S. Lester Li, A. Zhang, B. Chen, H. Matusik, C. Liu, D. Rus, V. Sitzmann

ACADEMIC SERVICE

Reviewer of NeurIPS, ICLR, ICML, CVPR, RSS, ICRA, IROS, RAL, AAAI *2021-present*
Teaching Assistant, MIT 6.S183 Diffusion Models, 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 *Aug 2022*
Honor degree in EECS, High honor in general scholarship, Dean's List, UC Berkeley *2017-2021*