

Brian Yang

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Education

University of California, Berkeley (*Class of 2020*) **Computer Science B.A., GPA: 3.7/4.0**

Relevant Coursework Data Structures and Algorithms, Intro to Artificial Intelligence, Computer Architecture and Machine Structures, Probability and Random Processes, Discrete Math and Probability Theory, Multivariable Calculus, Natural Language Processing, Intro to Machine Learning

Skills/Portfolio

Languages	Python, Java/C#, JavaScript	LinkedIn	www.linkedin.com/in/bhyang
Frameworks	PyTorch, ROS, V-REP, Docker	GitHub	www.github.com/bhyang
Clubs / Activities	Machine Learning @ Berkeley, Parliamentary Debate at Berkeley		

Experience

PRO Unlimited @ Facebook AI Research (FAIR)

June 2019 – Present

Contractor (supervised by Dr. Roberto Calandra)

Menlo Park, CA

- Investigating the self-supervised learning of in-hand dexterous robotic manipulation with novel hardware
- Created and documented high-level interfaces for robotic manipulators and sensors for internal use at FAIR
- Designed and built fully autonomous ROS-integrated environment for real-world manipulation experiments

Robotic AI & Learning Lab (RAIL)

August 2017 – Present

Undergraduate Researcher (supervised by Prof. Sergey Levine)

Berkeley, CA

- Implemented and validated several state-of-the-art neural network based approaches for robotic grasping tasks
- Designed an open-source setup for running experiments on robot arms to lower the cost of entry for robotics
- Developed an exhaustive benchmark for evaluating robotic grasping approaches on standardized hardware
- Studied optical flow and visual servoing for morphology-agnostic control from purely visual observations
- Published work in leading research conferences (NeurIPS, ICRA) and presented at established academic venues

Swarm Lab

May 2017 – August 2017

Undergraduate Researcher (supervised by Prof. Kristofer Pister)

Berkeley, CA

- Led a project to design and implement an intelligent state-of-the-art controller for a millimeter-scale micro-robot
- Designed a novel path planning algorithm that utilizes black-box optimization to navigate unseen environments
- Proposed a data-efficient algorithm for jointly optimizing microrobot morphologies and locomotive gait policies

Saltire Software

June 2015 – August 2015

Software Engineering Intern

Portland, OR

- Developed a web applet for users to customize, render, and order 3D-printed camshaft models online
- Created interactive educational resources for illustrating complex mechanical systems using JavaScript
- Presented work at the 2015 Apprenticeships in Science & Engineering (ASE) Symposium

Publications

B. Yang*, D. Jayaraman*, G. Berseth, A. Efros, S. Levine. "MAVRC: Morphology Agnostic Visual Robotic Control", *IEEE Robotics and Automation Letters (RA-L)* and *IEEE Conference on Robotics and Automation (ICRA)*, 2020 (*preprint*).

B. Yang, D. Jayaraman, J. Zhang, S. Levine. "REPLAB: A Reproducible Low-Cost Arm Benchmark for Robotic Learning", *IEEE International Conference on Robotics and Automation (ICRA)*, 2019.

T. Liao, G. Wang, **B. Yang**, R. Lee, K. S. J. Pister, S. Levine, R. Calandra. "Data-efficient Learning of Morphology and Controller for a Microrobot", *IEEE Conference on Robotics and Automation (ICRA)*, 2019.

B. Yang*, G. Wang*, R. Calandra, D. S. Contreras, S. Levine, K. S. J. Pister. "Learning Flexible and Reusable Locomotion Primitives for a Microrobot", *IEEE Robotics and Automation Letters (RA-L)* and *IEEE Conference on Robotics and Automation (ICRA)*, 2018.

B. Yang, G. Wang, R. Calandra, D. S. Contreras, S. Levine, K. S. J. Pister. "Learning Locomotion Primitives from Contextual Bayesian Optimization", *NIPS workshop on Bayesian optimization for science and engineering*, 2017.

Side Projects

V-REP Gym – an OpenAI gym environment for training RL agents; built using V-REP (a robotics simulator) and Python

Barebones-Markov – a Python bot for imitated text generation with arbitrary languages/syntax using Markov chains

All source code can be found on my GitHub page (linked above)

Honors

- 2017, 2018 Upsilon Pi Epsilon (UPE) Candidate (GPA in top third of declared CS majors)
- 2018 National Parliamentary Tournament of Excellence (NPTE) Champion