Yifan You

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Education

University of California, Los Angeles (UCLA) Sep 2018 – Jun 2022

B.S., Mathematics (GPA: 3.95)

- **Math**: Linear Algebra, Probability, Convex Optimization*, First-Order Optimization*, Measure Theory*, Functional Analysis*, Real Analysis, Complex Analysis, Topology, Group Theory*, Ring Theory*
- **CS**: Algorithms, Data Structures, Reinforcement Learning*, Computability and Complexity, Computer Architecture

(* denotes graduate classes)

Publications

[1] Lin Shao, **Yifan You**, Mengyuan Yan, Shenli Yuan, Qingyun Sun, Jeannette Bohg. GRAC: Self-Guided and Self-Regularized Actor-Critic. *CoRL*, 2021.

[2] **Yifan You***, Lin Shao*, Toki Migimatsu, Jeannette Bohg. OmniHang: Learning to Hang Arbitrary Objects with Contact Point Correspondence and Neural Collision Estimation. *ICRA*, 2021.

[3] (Poster) Kevin Lee, Siddharth Somasundaram, **Yifan You**, Guangyuan Zhao, Achuta Kadambi. Plenoptic-10: Vision under high dimensional physics. *2019 Southern California Machine Learning Symposium*, 2019.

Experience

CMU RoboTouch Lab Sep 2021 – Present

Undergraduate Researcher, advised by Wenzhen Yuan

- Developing a hierarchical algorithm for in-hand manipulation that incorporates tactile feedback from GelSight sensors. Planning to showcase demo on a real robotic hand.

Columbia Artificial Intelligence and Robotics Lab Apr 2021 – Present

Undergraduate Researcher, advised by Shuran Song

- Developing algorithm for learning a single grasping policy that generalizes to novel grippers with different actuation methods and control parameters, including articulated grippers, soft grippers, and suction grippers.

Stanford Interactive Perception and Robot Learning Lab Dec 2019 – Mar 2021

Undergraduate Researcher, advised by Jeannette Bohg

- Proposed and developed an algorithm for a novel robotic manipulation problem of hanging arbitrary objects onto supporting items, using contact point correspondence and neural motion planning.
- Worked on GRAC, a deep RL algorithm which removes the target network and combines policy gradient with zero-order optimization for actor improvement. We achieve/outperform SOTA on the OpenAI Mujoco task suite.

Intel AI Jun 2019 – Sep 2019

Machine Learning Intern

- Developed a test framework that evaluates performance of 30+ machine learning models with 100+ test settings across 5 hardware platforms, speeding up evaluation by 50%. Test framework is used by 5 other teams at Intel.
- Found and debugged critical (10x) neural network inference slow-downs, collaborated with multiple product teams to resolve these issues.

Technical Skills

Languages & Tools: Python, C/C++, PyTorch, TensorFlow, PyBullet, SOFA, OMPL, AWS, Docker
Algorithms: Computer Vision, Reinforcement Learning, Motion Planning, Kinematics, Search, Dynamic Programming

Honors

Upsilon Pi Epsilon Honors Society - Member	Jun 2019
LA Hacks - Best Use of Taboola API	Mar 2019
UCLA ACM Hack on the Hill - Best Overall Hack	Feb 2019
USA Computing Olympiad - Platinum Division	Mar 2018

Extracurricular Activities

OnCampus @ UCLA (oncampus.us) - *Technical Lead* Dec 2018 – Dec 2020

- Co-founded OnCampus, a platform that helps students find student clubs and community at UCLA. Led a team of 12 to build the website from scratch.
- OnCampus had over 900 monthly active users. Oversaw the campus-wide virtual club fair hosted by OnCampus during COVID-19 with over 2000 student sign-ups. Covered by UCLA school newspaper.

UCLA UAS (Unmanned Aerial Systems) - *Engineer of Controls Team* Sep 2018 – Jun 2019

- Optimized controls of Spinny, a quadcopter with 6-foot diagonal span capable of autonomous flight, obstacle avoidance, surveying, and payload drop. Spinny placed 22nd out of 75 teams at AUVSI SUAS, an international UAS competition.
- Built a custom mission compiler which checks for invalid commands and flight paths, reducing flight execution errors by 30%.