Will Panitch

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Summary

Hey there! I'm a student in the EECS BS/MS program at the University of California, Berkeley whose interests fall broadly at the intersection of learned sensing and control methods for real-world robotic agents. Of particular note, I am interested in visual and proprioceptive perception and decision-making pipelines for embodied learning and intelligence.

Education

University of California, Berkeley | EECS 5-year BS/MS | Regents' & Chancellor's Scholar
B.S. w/ honors & M.S. Electrical Engineering and Computer Science | GPA: 3.9/4.0
Relevant Coursework: Reinforcement Learning; Robotic Control & Manipulation; NLP; Deep Neural Nets; Signal Processing; Learning, Decisions, & Games; Computer Vision; Computational Cognition

Community High School | Arts and Literature Magnet Program
High School Diploma | GPA: 4.0/4.0

Peer-Reviewed Publications

Prompting with Robot Trajectories for In-Context Imitation Learning
Manuscript under submission to the 2024 Conference on Robot Learning
Letian Fu*, Huang Huang*, Gaurav Datta*, Lawrence Yunliang Chen, **Will Panitch**, Fangchen Liu, Hui Li, Ken Goldberg

A Touch, Vision, and Language Dataset for Multimodal Alignment
Published and presented (oral) at the 2024 International Conference on Machine Learning
Max Fu, Gaurav Datta*, Huang Huang*, **Will Panitch***, Jaimyn Drake*, Joseph Ortiz, Mustafa Mukadam, Mike Lambeta, Roberto Calandra, Ken Goldberg

SuFIA: Language-Guided Augmented Dexterity for Robotic Surgical Assistants
Manuscript under submission to the 2024 Conference on Intelligent Robots and Systems
Masoud Moghani, Lars Doorenbos, **Will Panitch**, Sean Huver, Mahdi Azizian, Ken Goldberg, Animesh Garg

Automating Deformable Gasket Assembly
Manuscript to appear at the 2024 Conference on Automation Science and Engineering

Simeon Adebola*, Tara Sadjadpour*, Karim El-Refai*, **Will Panitch**, Zehan Ma, Roy Lin, Tianshuang Qiu, Shreya Ganti, Charlotte Le, Jaimyn Drake, Ken Goldberg

STITCH: An Augmented Dexterity Algorithm for Suture Throws Involving Thread Management, Cinching, and Handover
Best paper runner-up at the 2024 International Symposium on Medical Robotics
Kush Hari*, Hansoul Kim*, **Will Panitch***, Kishore Srinivas, Vincent Schorp, Karthik Dharmarajan, Shreya Ganti, Tara Sadjadpour, Ken Goldberg

Robot-Assisted Vascular Shunt Insertion with the dVRK Surgical Robot
Published in the Journal of Medical Robotics Research
Karthik Dharmarajan*, **Will Panitch***, Baiyu Shi, Huang Huang, Lawrence Yunliang Chen, Masoud Moghani, Qinxi Yu, Kush Hari, Thomas Low, Danyal Fer, Animesh Garg, Ken Goldberg

ORBIT-Surgical: An Open-Simulation Framework for Accelerated Learning Environments in Surgical Autonomy
Published at the 2024 International Conference on Robotics and Automation
Qinxi Yu, Masoud Moghani, Karthik Dharmarajan, Vincent Schorp, **Will Panitch**, Jingzhou Liu, Kush Hari, Huang Huang, Mayank Mittal, Ken Goldberg, Animesh Garg

Self-Supervised Learning for Interactive Perception of Surgical Thread for Autonomous Suture Tail-Shortening
Finalist for best healthcare automation paper at the 2023 International Conference on Automation Science and Engineering
Vincent Schorp, **Will Panitch**, Kaushik Shivakumar, Vainavi Viswanath, Justin Kerr, Yahav Avigal, Danyal Fer, Lionel Ott, Ken Goldberg

A Trimodal Framework for Robot-Assisted Vascular Shunt Insertion When a Supervising Surgeon is Local, Remote, or Unavailable
Published and presented (oral) at the 2023 International Symposium on Medical Robotics
Karthik Dharmarajan*, **Will Panitch***, Baiyu Shi, Huang Huang, Lawrence Yunliang Chen, Thomas Low, Danyal Fer, Ken Goldberg

Automating Vascular Shunt Insertion with the dVRK Surgical Robot
Published at the 2023 International Conference on Robotics and Automation
Karthik Dharmarajan*, **Will Panitch***, Muyan Jiang, Kishore Srinivas, Baiyu Shi, Yahav Avigal, Huang Huang, Thomas Low, Danyal Fer, Ken Goldberg

3-D Localization of Micromanipulators Using Microscopy for Autonomous Visual Servoing
Published and presented (oral) at the 2022 Computational Optical Sensing and Imaging session of the Optica Imaging Congress
Ryan Mei, **Will Panitch,** Laura Waller

A Digital Twin Framework for Telesurgery in the Presence of Varying Network Quality
Published and presented at the 2022 Conference on Automation Science and Engineering

Sophea Bonne*, **Will Panitch***, Karthik Dharmarajan*, Kishore Srinivas*, Jerri-Lynn Kincade, Thomas Low, Bruce Knoth, Cregg Cowan, Dan Fer, Brijen Thananjeyan, Justin Kerr, Jeffrey Ichnowski, Ken Goldberg

In-Progress & Non-Peer-Reviewed Projects

A Unified Framework for Autonomous Suture Planning and Execution with the dVRK Surgical Robot
Working Paper

Kush Hari, Hansoul Kim, **Will Panitch**, Viraj Ramakrishnan, Kishore Srinivas, Julia Isaac, Ken Goldberg

Mitigation Contracts: A Mechanism Design Approach to Anthropogenic Climate Change
Working Paper

Naveen Durvasula, **Will Panitch**

A State-by-State Exploration of the Effect of Abortion Policies After the Fall of *Roe v. Wade*
Presented at Berkeley Information Science Symposium, 2022

Dara Ajayi, Ian Castro, Alora Clark, **Will Panitch**

RED CORAL: PETAL Repository of Electronic Data COVID-19 Observational Study
Project concluded; data pipeline and repository used in more than 25 published papers on COVID-19

University of Michigan Medicine

Behavior-Weighted Actor-Critic: Offline Belief Network Pretraining for Online Exploration
Final Project – CS285

Aaron Rovinsky, **Will Panitch**

AUTOFocus: Using Microscope Depth-of-Field Blur for 3D Localization of Micromanipulators
Final Project – EECS106A/B, Methods and models open-sourced and published

Will Panitch, Ryan Mei

On-Policy Maximum Entropy Deep Reinforcement Learning
Final Project – CS182

Naveen Durvasula, **Will Panitch**, Kamyar Salahi

A Statistical Analysis of Racial Bias in Pulse Oximetry Measurement
Working Project

University of Michigan Medicine

Selected Honors

2019   Academic Games League of America National Overall Competition, 4th Place
2019–2023   UC Berkeley Regents' and Chancellor's Scholar (top 1–2% of undergraduates)
2019–2022   UC Berkeley Dean's List Recipient

Personal Interests & Service Roles

Regents' and Chancellor's Scholars Association | Chair

- Elected to lead 800+ person scholarship community, including management of $100,000+ budget, representation of scholarship corps to campus staff/leadership, and organization of flagship events
- Led R&C scholarship admissions audit, which seeks to address the impact of our merit-based community on campus diversity and admissions
- Organized TEDx Berkeley (world's largest student-run TEDx event), Regents' Overnight Host Program, RCSA Yacht Party, R&C Freshman Yield Programs, & RCSA Peer-to-peer Mentorship Program

UC Berkeley Data 8 Course Staff | Instructional Staff

- Wrote worksheets and labs for 1000–1600 person undergraduate cohort per semester
- Held 3 hours of weekly office hours, plus 3 tutoring/lab sections per week
- Achieved perfect score in staff evaluations

DeCadence A Cappella | Music and Technology Manager

- Chose repertoire, arranged, and directed campus's premiere mixed-gender a cappella group
- Designed new website and social media presence, and directed the recording of an EP
- Organized travel, sound, and video equipment setup for gigs as far as LA

UC Berkeley Eta Kappa Nu (EECS Honor Society) | Bridge Officer

- Hold 2–5 hours of weekly office hours, plus community events, review sessions, and mentoring program
- Helped organize EECS Day, Black in STEM Day, and other outreach events for the CS community
- Took and edited pictures, videos, and presentations for communication with national organization