

BRYON TJANAKA

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EDUCATION

University of Southern California (USC) · Los Angeles, CA Aug. 2020 - Dec. 2025
Ph.D. Computer Science · Advisor: Stefanos Nikolaidis
M.S. Computer Science (May 2022) · GPA: 4.0/4.0
University of California, Irvine (UCI) · Irvine, CA Sept. 2017 - Jun. 2020
B.S. Computer Science (AI specialization) · summa cum laude (GPA: 4.0/4.0) · ICS Honors · Regents' Scholar

EXPERIENCE

Waymo LLC · Mountain View, CA Jan. 2026 - Present
Software Engineer
Interactive and Collaborative Autonomous Robotics (ICAROS Lab) · USC (PI: Stefanos Nikolaidis) Aug. 2020 - Dec. 2025
Research Assistant

- Scale quality diversity optimization and evolutionary algorithms to reinforcement learning and human-robot collaboration
- Build infrastructure for running experiments on university clusters and local GPU workstations

InstaDeep Ltd. · Boston, MA May 2023 - Sept. 2023
Ph.D. Research Intern

- Generated proteins by fine-tuning transformers with quality diversity optimization

Google, Inc. · Mountain View, CA Jun. 2020 - Aug. 2020
Software Engineering Intern, Google Ads

- Reduced Ads Serving costs by 4% by rearranging flow of user queries

Software Engineering Intern, Google Ads Jun. 2019 - Sept. 2019

- Implemented, optimized, and evaluated multithreaded affinity clustering, a scalable clustering algorithm

Engineering Practicum Intern, Google Assistant Jun. 2018 - Sept. 2018

- Developed and documented a tool to evaluate Google Assistant extensions by analyzing responses to thousands of queries

Undergraduate Research · UCI
Intelligent Dynamics Lab (PI: Roy Fox) Oct. 2019 - Jun. 2020
Mobley Lab (PI: David Mobley) Oct. 2018 - Jun. 2020

SELECTED PROJECTS

pyribs: A Bare-Bones Python Library for Quality Diversity Optimization Sep. 2020 - Present
Developed as a Research Assistant in the ICAROS Lab · <https://pyribs.org>

- Open source Python library designed to make quality diversity more simple, flexible, and accessible
- First released Feb. 2021, published as a full paper at Genetic and Evolutionary Computation Conference (GECCO) 2023
- 200+ stars on GitHub; 50+ paper citations; Users include: Google DeepMind, AutoDesk Research, Huawei Noah's Ark Lab

Training Diverse High-Dimensional Controllers by Scaling Covariance Matrix Adaptation MAP-Annealing 2020 - 2023
Completed as a Research Assistant in the ICAROS Lab · <https://scalingcmamae.github.io>

- Scaled up an existing quality diversity algorithm to optimize controllers with tens of thousands of parameters
- Published in Robotics and Automation Letters (RA-L) in Oct. 2023; presented at ICRA 2024

LEADERSHIP & SERVICE

Student Mentorship in ICAROS Lab Aug. 2020 - Present

- Advised eight undergraduate/master's students and guided two students to receive the USC Provost Fellowship
- Mentored two high school students from underrepresented backgrounds as part of the USC SHINE program (2021, 2022)

Reviewer for Conferences and Journals Aug. 2020 - Present

- GECCO, ICLR, NeurIPS, ICRA, JMLR, ACM TAAS, AURO, IEEE TEVC, Swarm and Evolutionary Computation

AWARDS

NVIDIA Academic Hardware Grant (Award: NVIDIA RTX A6000) Mar. 2022
National Science Foundation Graduate Research Fellowship Mar. 2021

ADDITIONAL INFORMATION

Programming Languages: Python, C/C++, JavaScript, Latex, HTML/CSS
Libraries: PyTorch, JAX, LangChain, NumPy, Matplotlib, Hydra, Dask, Pytest, static site generators (Jekyll, Eleventy)
Tools: (Neo)vim, Tmux, Git, Slurm, Linux, Inkscape, Google Suite, GitHub Actions, Ollama
Personal: Competitive Ballroom Dance (since 2022; recently placed 1st in Pre-Champ American Smooth), Graphic Design (<https://btjanaka.net/art>), Champion of 2017 VEX Robotics High School World Championship (>20,000 teams)