

Ethan K. Gordon

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Academics / Education

- start Apr 2024 📌 **Postdoctoral Researcher, University of Pennsylvania** GRASP
DAIR Lab, Advisor: Michael Posa, in collaboration with the Boston Dynamics AI Institute
Project Title: *Object-centric learning for control of dexterous manipulation*
- 2018 – 2023 📌 **Ph.D., University of Washington** Computer Science and Engineering
Personal Robotics Lab, Advisor: Siddhartha Srinivasa
Dissertation: *Tractably Adaptable Food Manipulation for Robot-Assisted Feeding*
Research Scientist (Jan-Mar 2024), M.S. (June 2020), GPA: 4.0
- 2013 – 2017 📌 **B.S.E., Princeton University** Electrical Engineering, *Summa Cum Laude*
GPA: 3.77, Dept. GPA: 3.92, Research Advisor: Paul Prucnal
Cert.: Engineering Physics, Robotics & Intelligent Systems, Applications of Computing
Thesis: *Design and Control of a Photonic Neural Network Applied to High-Bandwidth Classification*
Awards: (2017) Engineering Physics Senior Thesis Award, Optical Engineering Award of Excellence, Election to Sigma Xi, (2016) Rhodes Finalist, District 10, (2015) Shapiro Prize for Academic Excellence
- 2011 – 2013 📌 **Illinois Math and Science Academy (IMSA)**
Awards: (2013) National Merit Scholarship, Northwestern University (turned-down)

Select Publications

- 1 **E. K. Gordon***, A. Nanavati*, R. Challa, B. H. Zhu, T. A. Kessler Faulkner, and S. S. Srinivasa, “Towards general single-utensil food acquisition with human-informed actions,” in *7th Annual Conference on Robot Learning (CoRL)*, 2023. 🌐URL: <https://openreview.net/forum?id=UZpWSDA3tZJ>.
- 2 A. Nanavati*, P. Alves-Oliveira*, T. Schrenk, **E. K. Gordon**, M. Cakmak, and S. S. Srinivasa, “Design principles for robot-assisted feeding in social contexts,” in *2023 18th ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, **Best Design Paper Award Winner**, 2023. 🌐DOI: 10.1145/3568162.3576988.
- 3 **E. K. Gordon**, S. Roychowdhury, T. Bhattacharjee, K. Jamieson, and S. S. Srinivasa, “Leveraging post hoc context for faster learning in bandit settings with applications in robot-assisted feeding,” in *2021 IEEE International Conference on Robotics and Automation (ICRA)*, 2021, pp. 10 528–10 535. 🌐DOI: 10.1109/ICRA48506.2021.9561520.

Talks, Workshops, and Demos

- Mar 2024 📌 Demo Track at HRI, Companion Proceedings, *Boulder, CO*
- Nov 2023 📌 UW Annual Research Showcase Demo and Talk, **People’s Choice Prize**, *Seattle, WA*
- Jul 2023 📌 Generalizeable Manipulation Policy Learning Workshop at RSS, *Daegu, SK*
📌 Learning Dexterous Manipulation Workshop at RSS, *Daegu, SK*
- Jun 2023 📌 Assistive Manipulation Workshop at ICRA, **Best Poster**, *London, UK*
- Mar 2023 📌 **HRI Pioneer**, *Stockholm, SE*
- June 2022 📌 KTH/RPL Summer School, *Stockholm, SE*
- May 2022 📌 Northwest Robotics Symposium Talk, University of Washington, *Seattle, WA*
- Nov 2019 📌 Workshop on Robotic Food Manipulation at Humanoids, *Toronto, CA*

Talks, Workshops, and Demos (continued)

- Aug 2019 ■ Workshop on AI × Food at IJCAI, *Macau*
- Dec 2018 ■ NeurIPS Industry Demo Day, **Best Demonstration Award**, *Montreal, CA*
 - See robotfeeding.io/demos/ for complete list.
- Aug 2015 ■ MIRTHERU Summer Colloquium, RF Self-Interference Cancellation, *Princeton, NJ*

Service and Leadership

- Mentorship ■ *MS*: Sumegh (Amazon), Xiang (PhD, Harvard); *Ugrad*: Ramya (PhD OSU), Jaclyn (HBO), Sam (MS CMU); *HS*: Daniel (BS Columbia), Nicholas (BS MIT), Haya (BS MIT)
- Peer Reviewer ■ ICRA (8), R-AL (6), HRI (3+2 demo), IROS (3), Humanoids (2), SORO (2), T-RO (1x3), JIST (1)
- Student Volunteer ■ CoRL 2023, HRI 2023, ACC 2021, HRI 2020* (canceled, COVID)
- Service at UW ■ Prospective Admissions Mentor (2021, 2022); PhD Admissions: Reviewer (2019-2022) and Robotics Student Area Chair (2021-2022); 1st-Year PhD Mentorship: Mentor (2022-2023) and Coordinator (2020-2021); Robotics Visit Days Coordinator (2019-2021)
- Mar 2024 ■ **HRI Pioneers 2024**, General Chair (US), *Boulder, CO*
- Mar 2023 ■ **Workshop on HIRL at HRI**, Organizer, *Stockholm, SE*
- Jul 2020 — Apr 2024 ■ **FamilyWorks Seattle Food Bank**, 'Food Rescue' pickup from grocery stores.
- Jan 2019 ■ **FIRST Robotics**, Vex IQ Challenge Judge
- 2014 — 2017 ■ **Princeton Splash**, Circuit Design (2016, 2017), Special Relativity (2014)

Industry and Teaching

- Teaching Assistant ■ CSE 490v VR Systems (W20, UW), CSE 481c Robotics Capstone (W19, UW), CSE 481v VR Capstone (F18, UW), ELE 302 Car Lab (S17, Princeton)
- Jan – Apr 2022 ■ **Honda Research**, *San Jose, CA*, In-Hand Manipulation, with Rana Soltani Zarrin
- June – Aug 2021 ■ **Summer STEM Institute**, *Remote*, Mentored 2 high school students.
- Aug 2017 – Sep 2018 ■ **Oculus VR**, *Menlo Park, CA*, Varifocal displays for VAC and prescription correction, with Douglas Lanman
- Jun - Aug 2016 ■ **Facebook Connectivity Lab**, *Menlo Park, CA*, Wearable BLE mesh network, with Ramesh Raskar
- Jun - Aug 2014 ■ **JARST, Inc.**, *Chicago, IL*, github.com/encryptedmessaging, with Josh Metnick

Miscellaneous Experience

Engineering Projects

- 2020 — 2021 ■ **Real Robot Challenge**, Max Planck Institute, Runner-Up (€2000), See Github
- 2017 ■ **Princeton Hyperloop (Fluxor)**, Analyzed pod dynamics and levitation physics.
- 2015 — 2017 ■ **Brown Robotics Olympiad**, 3rd Place (2015)
- 2016 ■ **Ball-Catching Robot**, ELE 302 Course Project, see Github
- 2014 ■ **Implementing CoinJoin**, COS 597e Course Project, see Github
- Hackathons ■ Android App Sound Localization + Subtitles (HackPrinceton 2016, **Top 10**), AR Sound Localization + Subtitles (HackPrinceton 2015, **Top 10**), RGB Sign Language Letter Transcriber (HackPrinceton 2014 **1st Place**)

Miscellaneous Experience (continued)

Arts

- Aug 2017 — Sep 2018 **Vocal Network**, Meta's A Cappella Group, performs annually in Techapella
- 2013 — 2017 **Acapellago**, Princeton's No-Audition A Cappella Group, Founder
- 2014 — 2017 **Koleinu**, Princeton's Jewish A Cappella Group, President (2016), Performed at White House Hanukkah Celebration
- 2013 — 2015 **Lighting Designer**, *Theatre Intime*; All-Freshman Revue (2013), Student Playwrights' Festival (2014), How the Other Half Loves (2015)

Full Publications

Conference Proceedings

- 1 **E. K. Gordon** and R. S. Zarrin, "Online augmentation of learned grasp sequence policies for more adaptable and data-efficient in-hand manipulation," in *2023 IEEE International Conference on Robotics and Automation (ICRA)*, 2023, pp. 5970–5976. [DOI: 10.1109/ICRA48891.2023.10161003](https://doi.org/10.1109/ICRA48891.2023.10161003).
- 2 **E. K. Gordon***, A. Nanavati*, R. Challa, B. H. Zhu, T. A. Kessler Faulkner, and S. S. Srinivasa, "Towards general single-utensil food acquisition with human-informed actions," in *7th Annual Conference on Robot Learning (CoRL)*, 2023. [URL: https://openreview.net/forum?id=UZpWSDA3tZJ](https://openreview.net/forum?id=UZpWSDA3tZJ).
- 3 A. Nanavati*, P. Alves-Oliveira*, T. Schrenk, **E. K. Gordon**, M. Cakmak, and S. S. Srinivasa, "Design principles for robot-assisted feeding in social contexts," in *2023 18th ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, **Best Design Paper Award Winner**, 2023. [DOI: 10.1145/3568162.3576988](https://doi.org/10.1145/3568162.3576988).
- 4 S. Belkhale, **E. K. Gordon**, Y. Chen, S. Srinivasa, T. Bhattacharjee, and D. Sadigh, "Balancing efficiency and comfort in robot-assisted bite transfer," in *2022 International Conference on Robotics and Automation (ICRA)*, 2022, pp. 4757–4763. [DOI: 10.1109/ICRA46639.2022.9812332](https://doi.org/10.1109/ICRA46639.2022.9812332).
- 5 **E. K. Gordon**, S. Roychowdhury, T. Bhattacharjee, K. Jamieson, and S. S. Srinivasa, "Leveraging post hoc context for faster learning in bandit settings with applications in robot-assisted feeding," in *2021 IEEE International Conference on Robotics and Automation (ICRA)*, 2021, pp. 10 528–10 535. [DOI: 10.1109/ICRA48506.2021.9561520](https://doi.org/10.1109/ICRA48506.2021.9561520).
- 6 T. Bhattacharjee, **E. K. Gordon**, R. Scalise, M. E. Cabrera, A. Caspi, M. Cakmak, and S. S. Srinivasa, "Is more autonomy always better? exploring preferences of users with mobility impairments in robot-assisted feeding," in *2020 15th ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, 2020, pp. 181–190. [DOI: 10.1145/3319502.3374818](https://doi.org/10.1145/3319502.3374818).
- 7 **E. K. Gordon**, X. Meng, T. Bhattacharjee, M. Barnes, and S. S. Srinivasa, "Adaptive robot-assisted feeding: An online learning framework for acquiring previously unseen food items," in *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2020, pp. 9659–9666. [DOI: 10.1109/IROS45743.2020.9341359](https://doi.org/10.1109/IROS45743.2020.9341359).
- 8 R. Feng, Y. Kim, G. Lee, **E. K. Gordon**, M. Schmittle, S. Kumar, T. Bhattacharjee, and S. S. Srinivasa, "Robot-assisted feeding: Generalizing skewering strategies across food items on a plate," in *Robotics Research*, T. Asfour, E. Yoshida, J. Park, H. Christensen, and O. Khatib, Eds., Cham: Springer International Publishing, 2019, pp. 427–442. [DOI: 10.1007/978-3-030-95459-8_26](https://doi.org/10.1007/978-3-030-95459-8_26).

Journal Articles

- 1 N. Funk, C. Schaff, R. Madan, T. Yoneda, J. U. De Jesus, J. Watson, **E. K. Gordon**, F. Widmaier, S. Bauer, S. S. Srinivasa, T. Bhattacharjee, M. R. Walter, and J. Peters, "Benchmarking structured policies and policy optimization for real-world dexterous object manipulation," *IEEE Robotics and Automation Letters*, vol. 7, no. 1, pp. 478–485, 2022. [DOI: 10.1109/LRA.2021.3129139](https://doi.org/10.1109/LRA.2021.3129139).

Patents

- 1 **E. K. Gordon** and R. S. Zarrin, “Online augmentation of learned grasping,” US-20230339107-A1 (App. 17/940,267), Oct. 2023.
- 2 **E. K. Gordon** and R. S. Zarrin, “System and method for providing accelerated reinforcement learning training,” US-20230316126-A1 (App. 17/950,552), Oct. 2023.
- 3 A. Byagowi, R. Raskar, A. H. Coward, and **E. K. Gordon**, “Light field display tilting,” US-11156828-B1 (App. 16/028,382), Oct. 2021.
- 4 J. Metnick, R. Chiu, A. O. Smith, and **E. Gordon**, “Cryptocurrency verification system,” US-20160203448-A1 (App. 14/791,781), Jul. 2016.
- 5 A. Tait, M. Nahmias, B. Shastri, and **E. Gordon**, “System and method for mode-based photonic processing,” Provisional App. 62/844,435, Jun. 2016.

Companion Proceedings

- 1 **E. K. Gordon**^{*}, R. K. Jenamani^{*}, A. Nanavati^{*}, Z. Liu, D. Stabile, X. Dai, T. Bhattacharjee, T. Schrenk, J. Ko, H. Bolotski, *et al.*, “An adaptable, safe, and portable robot-assisted feeding system,” in *Companion of the 2024 ACM/IEEE International Conference on Human-Robot Interaction*, ser. HRI ’24, Boulder, CO, USA: Association for Computing Machinery, 2024. [DOI: 10.1145/3610978.3641085](https://doi.org/10.1145/3610978.3641085).
- 2 **E. K. Gordon**, “Balancing flexibility and precision in robot-assisted feeding,” in *Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction*, ser. HRI ’23, Stockholm, Sweden: Association for Computing Machinery, 2023, pp. 760–762, ISBN: 9781450399708. [DOI: 10.1145/3568294.3579977](https://doi.org/10.1145/3568294.3579977).
- 3 R. Mirsky, K. Baraka, T. Kessler Faulkner, J. Hart, X. Xiao, H. Yedidsion, I. Idrees, and **E. K. Gordon**, “2nd workshop on human-interactive robot learning (hir1),” in *Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction*, ser. HRI ’23, Stockholm, Sweden: Association for Computing Machinery, 2023, pp. 947–949, ISBN: 9781450399708. [DOI: 10.1145/3568294.3579962](https://doi.org/10.1145/3568294.3579962).
- 4 A. Nanavati, P. Alves-Oliveira, T. Schrenk, **E. K. Gordon**, M. Cakmak, and S. S. Srinivasa, “Unintended failures of robot-assisted feeding in social contexts,” in *Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction*, ser. HRI ’23, Stockholm, Sweden: Association for Computing Machinery, 2023, pp. 884–886, ISBN: 9781450399708. [DOI: 10.1145/3568294.3580209](https://doi.org/10.1145/3568294.3580209).

Theses

- 1 **E. K. Gordon**, “Tractably adaptable food manipulation for robot-assisted feeding,” University of Washington, 2023. [URL: https://ethankgordon.com/static/PhD_Dissertation.pdf](https://ethankgordon.com/static/PhD_Dissertation.pdf).
- 2 **E. K. Gordon**, “Design and control of a photonic neural network applied to high-bandwidth classification,” Princeton University, 2017. [URL: https://arxiv.org/abs/1810.06652](https://arxiv.org/abs/1810.06652).