Kevin Green | Roboticist

Graf Hall – 1680 SW Monroe Ave – Corvallis, OR 97331

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PhD student at Oregon State University studying the design and control of legged robots.

Education

- **Oregon State University** — **Corvallis, OR**
  PhD in Robotics - In Progress, Expected 2022 — *Sep. 2017-present*
  Advisors: Jonathan Hurst and Ross Hatton
- **University of Michigan** — **Ann Arbor, MI**
  B.S.E. Mechanical Engineering, Minor in Mathematics — *Sep. 2013–Apr. 2017*
  Summa Cum Laude
  Advisor: C. David Remy

Professional Appointments/Employment

- **Oregon State University: Dynamic Robotics Lab** — **Corvallis, OR**
  Graduate Research Fellow - Supervisors: Jonathan Hurst and Ross Hatton — *Sep. 2017–present*
  - Develop nonlinear modal control methods for robotic legs
  - Implement model predictive control footstep planning and operational space control inverse dynamics
  - Develop physics first RL and machine learning approaches for agile legged locomotion
- **University of Michigan Health System: Department of Otolaryngology** — **Ann Arbor, MI**
  Undergraduate Research Assistant - Supervisors: Glenn Green and Dave Zopf — *May 2016–Jul. 2017*
  - Designed customized glasses for children with facial deformities from facial scans using 3D printing
  - Created high fidelity surgical simulation models from raw CT data using Materialise Mimics and 3-Matic
  - Processed and produced surgical reference models for Juvenile Nasopharyngeal Angiofibroma from patient CT data
- **University of Michigan: RAM (Robotic and Motion) Research Lab** — **Ann Arbor, MI**
  Undergraduate Research Assistant - Supervisors: C. David Remy — *Jan. 2014–May 2016*
  - Designed, programmed, and tuned a walking controller in hardware and simulation for a series elastic biped
  - Designed, manufactured and programmed an active support system to catch a bipedal robot when it falls
  - Prototyped and tested inductance based pneumatic muscle force and position sensors
- **Whirlpool Corporation** — **Saint Joseph, MI**
  Engineering Intern - Supervisors J M Hunnell and Alvaro Vallejo — *Jun.–Aug. 2013, May-Aug. 2014*
  - Designed, prototyped and evaluated novel systems to remove all puddled water from items in dishwashers
  - Analyzed, aligned, and condensed washing machine test data for use in correlating dynamics models
  - Correlated a dynamic model of a washing machine to test data in order to predict the effects of design changes

Awards, Fellowships and Honors

2017: Graduate Research Fellowship, National Science Foundation (NSF) — *National*

2017: Provost Distinguished Fellowship — *Oregon State University*

2016: Award for Best Undergraduate Research Presentation in Dynamics and Controls *University of Michigan*

Publications

Refereed Journal Publications

V. C. Nanagas, K. R. Karamched, A. Powell, **Kevin Green**, A. P. Baptist, and G. E. Green, "Development of a 3-dimensional practice nasolaryngoscopy model," *Journal of Allergy and Clinical Immunology*, vol. 141, no. 2, Supplement, p. AB164, 2018.

C. L. Reighard, **Green, Kevin**, D. M. Rooney, and D. A. Zopf, "Development of a Novel, Low-Cost, High-fidelity Cleft Lip Repair Surgical Simulator Using Computer-Aided Design and 3-Dimensional PrintingDevelopment of a Cleft Lip Repair Surgical Simulator Using Computer-Aided Design and 3-D PrintingLetters," *JAMA Facial Plastic Surgery*, vol. 21, no. 1, pp. 77–79, 01 2019. [Online]. Available: https://doi.org/10.1001/jamafacial.2018.1237

K. J. Kovatch, A. R. Powell, **Green, Kevin**, C. L. Reighard, G. E. Green, V. T. Gauger, D. M. Rooney, and D. A. Zopf, "Development and multidisciplinary preliminary validation of a 3-dimensional-printed pediatric airway model for emergency airway front-of-neck access procedures." *Anesthesia and analgesia*, 2018.

C. L. Reighard, K. Green, A. R. Powell, D. M. Rooney, and D. A. Zopf, "Development of a high fidelity subglottic stenosis simulator for laryngotracheal reconstruction rehearsal using 3d printing," *International Journal of Pediatric Otorhinolaryngology*, vol. 124, pp. 134 – 138, 2019. [Online]. Available: http://www.sciencedirect.com/science/article/pii/S0165587619302484

Peer-Reviewed Conference Publications

Kevin Green, R. L. Hatton, and J. Hurst, "Planning for the unexpected: Explicitly optimizing motions for ground uncertainty in running," in *ICRA (Accepted)*, 2020. [Online]. Available: https://arxiv.org/abs/2001.10629

K. Green, N. Smit-Anseeuw, R. Gleason, and C. D. Remy, "Design and control of a recovery system for legged robots," in *2016 IEEE International Conference on Advanced Intelligent Mechatronics (AIM)*, July 2016, pp. 958–963.

T. Apgar, P. Clary, **Green, Kevin**, A. Fern, and J. Hurst, "Fast online trajectory optimization for the bipedal robot cassie," in *Robotics: Science and Systems*, 2018.

Patents

A. V. Noriega, H. R. Mondkar, and **Green, Kevin**, "Method of using high velocity water to remove puddling in a dishwasher," U.S. Patent 9 895 043, February, 2018.

——, "Method of using high velocity water to remove puddling in a dishwasher," U.S. Patent 9 986 883, June, 2018.

——, "Dishwasher with high-velocity sprayer," U.S. Patent 20 180 249 881, September, 2018.

D. Zopf, **Green, Kevin**, and K. Vankoevering, "Ear splint to correct congenital ear deformities," International Patent WO2 018 053 219A1, March, 2018.

Presentations

Conference Abstracts and Presentations

Kevin Green, R. L. Hatton, and J. Hurst, "Control of compliant robotic legs for modal behavior," in *Dynamic Walking Meeting*, 2019, oral Presentation.

M. Hector, **Kevin Green**, B. Sencer, and J. Hurst, "The energetic benefit of midstance ankle torque in dynamic gaits," in *Dynamic Walking Meeting*, 2019, oral Presentation.

Green, Kevin, T. Apgar, and J. Hurst, "Footstep planning and operational space control on cassie," in *Dynamic Walking Meeting*, 2018, oral Presentation. [Online]. Available: https://youtu.be/Cirjk-hXFH4

A. S. Ali, D. Zopf, **Green, Kevin**, G. Green, and C. Reighard, "71. computer-aided design and 3d printing to produce a model for simulation of cleft lip repair," vol. 54, no. 3. The Cleft Palate-Craniofacial Journal, 2017, p. e26.

Service

Mentoring

1. Yesh Godse, Oregon State Undergraduate — Fall 2019 - Present
   2020 Goldwater Scholar
2. Jonah Siekmann, Oregon State Undergraduate — Winter 2018 - Present
3. Elizabeth Childs, REU Student — Summer 2018
4. Andrew Sanders, Oregon State Undergraduate — Winter 2018 - Summer 2018
5. Grace Stridick, University of Michigan UROP Student — 2016-2017

Peer Reviewer

1. IEEE Robotics and Automation Letters (RA-L)
2. IEEE Transactions on Robotics (T-RO)
3. International Journal of Robotics Research (IJRR)
4. Mechanism and Machine Theory
5. IEEE International Conference on Robotics and Automation (ICRA)
6. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

Outreach

1. FIRST Tech Challenge Volunteer for Oregon State University Event

Media Coverage

1. "Oregon State among top robotics programs in country, according to report" Fox 12: KPTV. September 18, 2018 Television and Web
2. "Scientists At Oregon State Are Building Robots That Can Walk Like Us" Oregon Public Broadcasting. July 17, 2018. Web

Professional Organizations

Professional Societies

1. Tau Beta Pi Engineering Honor Society, Fall 2014
2. Pi Tau Sigma Mechanical Engineering Honor Society, Fall 2015
3. Phi Kappa Phi Mechanical Engineering Honor Society, Winter 2015

Citizenship: United States of America