

Brendon G. Anderson

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Education	University of California, Berkeley Ph.D. in Controls <i>Advisor:</i> Somayeh Sojoudi <i>Research Areas:</i> Optimization, Machine Learning, Control Theory <i>Minors:</i> Optimization, Statistics <i>GPA:</i> 3.906/4.0	Aug. 2018 – Present
	University of California, Berkeley M.S. in Controls <i>Thesis:</i> <i>Towards Optimality and Robustness Guarantees for Data-Driven Learning and Decision Making</i> <i>GPA:</i> 3.906/4.0	Aug. 2018 – May 2020
	University of California, Los Angeles B.S. in Mechanical Engineering <i>Technical Breadth Area:</i> Mathematics <i>GPA:</i> 4.0/4.0 (<i>summa cum laude</i>)	Sep. 2015 – Mar. 2018

Experience	Graduate Student Researcher — UC Berkeley <i>Advisor:</i> Somayeh Sojoudi <ul style="list-style-type: none">Conducted various research projects surrounding robustness and optimality guarantees for nonconvex optimization problems in machine learning.	Aug. 2018 – Present
	Jr. Development Engineer — UCLA Engineering <i>Advisor:</i> Robert M'Closkey <ul style="list-style-type: none">Designed, fabricated, and tested low-frequency folded pendulum accelerometer for use in UCLA's dynamic systems and control laboratories.	Jan. 2018 – Jun. 2018
	CVT Analysis, Design, Control — Baja SAE <ul style="list-style-type: none">Developed electronic continuously variable transmission (CVT) and executed system identification and control.Modeled mechanical CVT and constructed flyweight optimization program.	Sept. 2015 – Jun. 2018
	Research Assistant — UCLA Mathematics <i>Advisors:</i> Matt Haberland, Olga Turanova, and Andrea L. Bertozzi <ul style="list-style-type: none">Formulated performance quantification methods for swarm coverage control algorithms.	Jun. 2017 – Aug. 2017

Publications	[1] B. G. Anderson , Z. Ma, J. Li, and S. Sojoudi, "Tightened convex relaxations for neural network robustness certification," 2020. Under review.
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- [2] **B. G. Anderson** and S. Sojoudi, “Global optimality guarantees for nonconvex unsupervised video segmentation,” in *Proceedings of the 57th Annual Allerton Conference on Communication, Control, and Computing*, pp. 965–972, 2019.
- [3] **B. G. Anderson**, E. Loeser, M. Gee, F. Ren, S. Biswas, O. Turanova, M. Haberland, and A. L. Bertozzi, “Quantifying robotic swarm coverage,” in *Informatics in Control, Automation and Robotics: 15th International Conference, ICINCO 2018, Porto, Portugal, July 29–31, 2018, Revised Selected Papers*, vol. 613 of *Lecture Notes in Electrical Engineering*, pp. 276–301, Springer, 2019.
- [4] **B. G. Anderson**, E. Loeser, M. Gee, F. Ren, S. Biswas, O. Turanova, M. Haberland, and A. L. Bertozzi, “Quantitative assessment of robotic swarm coverage,” in *Proceedings of the 15th International Conference on Informatics in Control, Automation and Robotics (ICINCO)—Volume 2*, pp. 91–101, 2018.

Awards	<ul style="list-style-type: none"> • Graduate Division Block Grant Award, UC Berkeley Apr. 2019 • Harry M. Showman Prize (schoolwide research award), UCLA Jun. 2018 • Jonathan David Wolfe Memorial Scholarship, UCLA Apr. 2018
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Teaching	Supplemental Instructor — Palomar College <ul style="list-style-type: none"> • <i>Electromagnetism</i> (PHYS 231) Spring 2015 • <i>General Chemistry</i> (CHEM 115) Fall 2014, Spring 2015
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Professional Activities	<ul style="list-style-type: none"> • Peer Advisor for the Bay Area Graduate Pathways to Stem (GPS) program, hosted by UC Berkeley Engineering and Stanford Engineering, 2020. • Grant proposal contributor; assisted with writing DARPA funding proposal, 2019. • Chair of the session “Data Analytics”, 57th Annual Allerton Conference on Communication, Control, and Computing, 2019.
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Relevant Coursework	Optimization <ul style="list-style-type: none"> • <i>Nonlinear Programming</i>, Professor Javad Lavaei • <i>Convex Optimization</i>, Professors Somayeh Sojoudi and Laurent El Ghaoui • <i>Optimization Models</i>, Professors Laurent El Ghaoui and Alex Bayen
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Machine Learning	<ul style="list-style-type: none"> • <i>Statistical Learning Theory</i> (audit), Professors Ben Recht and Moritz Hardt • <i>Learning and Optimization</i>, Professor Anil Aswani • <i>Deep Learning</i> (online), Professor Andrew Ng • <i>Machine Learning</i> (online), Professor Andrew Ng
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Control Theory

- *Nonlinear Systems: Analysis, Stability, and Control*, Professor Claire Tomlin
- *Advanced Control Theory I*, Professor Roberto Horowitz
- *Advanced Control Theory II*, Professor Masayoshi Tomizuka
- *Linear Dynamic Systems*, Professor Robert M'Closkey
- *Digital Control*, Professor Tsu-Chin Tsao

Mathematics and Statistics

- *Theoretical Statistics (Classical)*, Professor Will Fithian
- *Theoretical Statistics (High-dimensional)*, Professor Yan Shuo Tan
- *Engineering Mathematics*, Professors Andrew Packard, Somayeh Sojoudi, and Kameshwar Poolla
- *Analysis (Real; Complex; Numerical)*
- *Differential Equations (Ordinary; Partial)*

Skills

Programming: MATLAB, Python, C++, CVX
Tools and Applications: L^AT_EX, TikZ, LabVIEW