



Nathaniel Tucker

*Department of Electrical and Computer Engineering
University of California, Santa Barbara
3106 Harold Frank Hall, Santa Barbara, CA 93106
nathaniel_tucker@ucsb.edu
<https://nathanieltucker.github.io/>
(503) 709-7806*

EDUCATION

Ph.D. in Electrical Engineering <i>University of California, Santa Barbara (UCSB)</i>	2017-Current
Smart Infrastructure Systems Lab Advisor: Mahnoosh Alizadeh	
M.S. in Electrical Engineering <i>Santa Clara University (SCU)</i>	2016-2017
Emphasis in Communication and Systems Advisor: Maryam Khanbaghi GPA: 4.00	
B.S. in Electrical Engineering, B.S. in Computer Science <i>Santa Clara University (SCU)</i>	2012-2016
Summa Cum Laude GPA: 3.89	

RESEARCH INTERESTS

- Smart Grid Technologies and Renewable Energy Integration
- Optimization and Routing in Electric Transportation Systems
- Urban Planning / Smart Cities / Architecture

JOURNAL PUBLICATIONS

2. N. Tucker, A. Moradipari, and M. Alizadeh, “Constrained Thompson Sampling for Real-Time Electricity Pricing with Grid Reliability Constraints”, *IEEE Transactions on Smart Grid*, 2019, **Submitted**.
1. N. Tucker and M. Alizadeh, “An Online Admission Control Mechanism for Electric Vehicles at Public Parking Infrastructures”, *IEEE Transactions on Smart Grid*, 2019, **Printed**.

CONFERENCE PUBLICATIONS

6. A. Moradipari, N. Tucker, T. Zhang, G. Cezar, and M. Alizadeh, “Mobility-Aware Smart Charging of Electric Bus Fleets”, *IEEE Power Engineering Society General Meeting (PESGM)*, 2020, **Submitted**.
5. N. Tucker, B. Turan, and M. Alizadeh, “Online Charge Scheduling for Electric Vehicles in Autonomous Mobility on Demand Fleets”, *Intelligent Transportation Systems Conference (ITSC)*, 2019, **To Appear**.
4. B. Turan, N. Tucker, and M. Alizadeh, “Smart Charging Benefits in Autonomous Mobility on Demand Systems”, *Intelligent Transportation Systems Conference (ITSC)*, 2019, **To Appear**.
3. N. Tucker, B. Ferguson, and M. Alizadeh, “An Online Pricing Mechanism for Electric Vehicle Parking Assignment and Charge Scheduling”, *IEEE American Control Conference (ACC)*, 2019, **To Appear**.
2. N. Tucker and M. Alizadeh, “Online Pricing Mechanisms for Electric Vehicle Management at Workplace Charging Facilities”, *56th Allerton Conference on Communication, Control, and Computing*, 2018, **Printed**.
1. N. Tucker and M. Khanbaghi, “Jump Linear Quadratic Control for Energy Management of a Nanogrid”, *IEEE American Control Conference (ACC)*, 2018, **Printed**.

PRESENTATIONS

3. 2019 Intelligent Transportation Systems Conference (ITSC), Auckland, NZ, Oct. 2019
2. 2019 American Control Conference (ACC), Philadelphia, PA, Jul. 2019
1. 2018 American Control Conference (ACC), Milwaukee, WI, Jun. 2018

AWARDS AND HONORS

- 2019-2020 Institute for Energy Efficiency (IEE) Excellence in Research Fellow. Fellowship award of \$22,500 to 1 PhD student per year for cutting-edge research contributions in the field of sustainability and/or energy efficiency.
- 2019 [Winter Quarter Student Spotlight](#), UCSB Center for Control, Dynamical Systems, and Computation (CCDC)
- 2017 Outstanding Graduate Student/Researcher, Department of Electrical Engineering, Santa Clara University
- 2016 Outstanding Graduating Senior for both GPA and contribution to the department, Department of Electrical Engineering, Santa Clara University
- 2016 First in Graduating Class, Department of Electrical Engineering, Santa Clara University
- 2016 Top 5% in Graduating Class, Department of Computer Science and Engineering, Santa Clara University

- 2013 KEEN Innovation Challenge, Maker Lab, School of Engineering, Santa Clara University
- 2012-2016 Dean's List, School of Engineering, Santa Clara University

TEACHING & MENTORSHIP

@ UCSB:

- 2018-2019: Co-mentored undergraduate student Tuo Zhang. Joint work resulted in a conference paper titled “Mobility-Aware Smart Charging of Electric Bus Fleets” submitted to PESGM 2020.

@ UCSB & Port Hueneme Naval Base:

- Summer 2019: Problem-based Initiatives for Powerful Engagement and Learning In Naval Engineering and Science (PIPELINES) program. Mentored team of undergraduate students working on an underwater electronics project for the Navy.

Project Title: “Don’t Crack under Pressure: Creating a Pressure-Tolerant Circuit Board”

Interns: Juan Carrillo, Emily Chapman

Project Mentors: Nathaniel Tucker, Bradley Hunter

@ University of California, Santa Barbara, ECE Department:

- Spring 2018: Teaching Assistant (TA) for ECE 10C: Circuits, Devices, and Systems

@ Santa Clara University, ELEN Department:

- Spring 2017: Teaching Assistant (TA) for ELEN 50: Electric Circuits
- Winter 2017: Teaching Assistant (TA) for ELEN 50: Electric Circuits
- Fall 2016: Teaching Assistant (TA) for ELEN 50: Electric Circuits
- Fall 2016: Teaching Assistant (TA) for ELEN 130: Control Systems

SERVICE

Journal Reviewer:

- IEEE Transactions on Smart Grid
- IEEE Transactions on Intelligent Transportation Systems
- IEEE Transactions on Industry Applications
- Elsevier: Electric Power Systems Research

Conference Reviewer:

- IEEE Conference on Decision and Control: 2019
- IEEE American Control Conference: 2019
- IEEE Power & Energy Society General Meeting: 2018, 2019

- IEEE GlobalSip: 2018, 2019
- IEEE ITSC: 2018, 2019
- IEEE SmartGridComm: 2018

Society Membership:

- IEEE, 2012-Current
 - IEEE Intelligent Transportation Systems Society (ITSS)
 - IEEE Power Engineering Society (PES)
- Tau Beta Pi Engineering Honor Society, 2014-Current
- Santa Clara University IEEE Student Branch, President, 2014
- Santa Clara University IEEE Student Branch, Treasurer, 2013

Other:

- @ *American Control Conference (ACC) 2019:*
 - July 2019: Participated in the Control of Networked Transportation Systems (CNTS) Workshop, in Philadelphia, PA. Took notes and helped write the executive summary for the workshop.

INDUSTRY EXPERIENCE

Lockheed Martin Space Systems Company
Systems Engineering Intern
Sunnyvale, CA

Summer 2016

Lockheed Martin Space Systems Company
Survivability Engineering Intern
Littleton, CO

Summer 2015

Cooper Environmental Services
Software Engineering Intern
Portland, OR

Summer 2014