curriculum vitæ of

Trager Joswig-Jones

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Education

2021 – present **Ph.D. Student,** Electrical Engineering — University of Washington, Seattle
Advisor : Dr. Baosen Zhang

2017 – 2021 **B.S.,** Electrical Engineering — University of Washington, Seattle
GPA: 3.94 | Concentration: Power Electronics & Drives, Sustainable Power Systems

Publications

Conference Publications

[1] G. Stephen, **T. Joswig-Jones**, S. Awara and D. Kirschen, "Impact of Storage Dispatch Assumptions on Resource Adequacy and Capacity Credit," *2022 17th International Conference on Probabilistic Methods Applied to Power Systems (PMAPS)*, 2022.

[2] **T. Joswig-Jones**, K. Baker, A. S. Zamzam, "OPF-Learn: An Open-Source Framework for Creating Representative AC Optimal Power Flow Datasets", *2022 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT)*. 2022.

Research Experience

2021 – Present Graduate Research Assistant — University of Washington
Professor Baosen Zhang (2022-present);
Washington Power Electronics Lab, Professor Brian Johnson (2021-2022)

Summer 2021 NREL SULI Intern — National Renewable Energy Laboratory
Power System Engineering Center, Energy Systems Control and Optimization Group

- Developed a Julia software package[1] to efficiently create datasets for training and benchmarking machine learning approaches to AC optimal power flow.

2020 – 2021 Undergraduate Research Assistant — University of Washington
Renewable Energy Analysis Lab, Professor Daniel Kirschen

- Researched the impacts of energy storage dispatch assumptions on resource adequacy assessment using the NREL Probabilistic Resource Adequacy Suite.

Teaching Experience

T.A. CHEM 466/566: Energy Materials, Devices, and Systems — Fall 2022
T.A. EE 457: Electrical Energy Distribution Systems — Spring 2021
Grader EE 456: Computer-Aided Design in Power Systems — Spring 2021
Grader EE 455: Power System Dynamics and Protection — Winter 2021
Grader EE 457: Electrical Energy Distribution Systems — Spring 2019

Professional Experience

Summer 2020 Electrical Hardware EXCEL Intern — General Motors
Engineering Product Development, Electrification Calibration Group

- Adapted the hybrid powermoding test suite for a vehicle program with a new serial architecture by partially automating the process to identify potentially unsafe operations in vehicle controls.

Summer 2019 — Product Engineering Intern — Micron Technology, Inc.
DRAM Quality Assurance Engineering Group

- Created a Python plotting application that can visualize trends over multiple sets of test data, pulled from a database, to facilitate the identification of premature dynamic random access memory (DRAM) device failures and errors in test flows.

Summer 2018 — R&D Engineering Intern — Schweitzer Engineering Laboratories

- Implemented a black-box global optimization algorithm in Python to identify sine wave functions through signal processing and evaluate the algorithm's potential for use in a digital relay element.
- Reviewed the software review specifications for a digital relay element and coded this software for testing with a TI digital signal processor.

Activities

2018 – 2021 — Propulsion System Integration Lead — UW EcoCAR
Department of Energy Advanced Technology Vehicle Competition series

- Led a group of 25 members on the design and integration of the team's hybridized powertrain for a Chevrolet Blazer by delegating projects, and managing the integration timeline.
- Co-authored a technical paper describing the teams hybrid design and integration plans, which received third place in the competition.

Honors

Grainger Endowment Ph.D. Fellowship - UW	2021
GSFEI Top Scholar Recruitment Award - UW	2021
Grainger Foundation Power Engineering Endowed Scholarship - UW	2020
Electrical Energy Industrial Consortium Scholarship Recipient - UW	2019
Eagle Scout - BSA	2016

Skills

Programming:	Proficient in `Python`, `Julia`[1] , and `MATLAB`. Working knowledge in `Rust`, `Java`, and `C/C++`
Software:	PLECS, Altium Designer, Multisim, Excel
Hardware:	HV Harness Construction, PCB Assembly, MCU Integration

Projects

Spring 2021 — E-Bike Power Electronics System — EE 453

Designed the power electronics hardware and controls for an E-bike to convert power from a 24V battery to control a BLDC motor. This included creating electrical schematics, fabricating a PCB, developing digital signal processor controls, and testing the integrated control system.

[1] OPFLearn.jl GitHub Repository