curriculum vitæ of
Trager Joswig-Jones

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EDUCATION

2021 – PRESENT	**Ph.D. Student,** Electrical Engineering	UNIVERSITY OF WASHINGTON, SEATTLE

GPA: 3.91 | 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

PREPRINTS

[1] **T. Joswig-Jones**, B. Zhang, "Optimal control of grid-interfacing inverters with current magnitude limits," arXiv [eess.SY]. 2023.; *arXiv preprint:* 2310.00473.

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, FALL 2023
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

2022	**UW GASP Mentor**

Graduate Application Support Program

- Provided feedback on the Statement of Purpose and CV of applicants to the UW ECE Ph.D and MS programs that consider themselves as an underrepresented or marginalized minority in ECE.

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.

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[1]OPFLearn.jl GitHub Repository