

curriculum vitae of
Trager Joswig-Jones

✉ joswitra@uw.edu ☎ +1 509 339 3132 in tragerjj 🏠 tragerjoswig-jones.github.io

EDUCATION

2021 – PRESENT	Ph.D. Student , Electrical Engineering Advisor : Dr. Brian Johnson	UNIVERSITY OF WASHINGTON, SEATTLE
2017 – 2021	B.S. , Electrical Engineering GPA: 3.94 Concentration: Power Electronics & Drives, Sustainable Power Systems	UNIVERSITY OF WASHINGTON, SEATTLE
	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

PUBLICATIONS

PREPRINTS

- [1] **T. Joswig-Jones**, K. Baker, A. S. Zamzam, “OPF-Learn: An Open-Source Framework for Creating Representative AC Optimal Power Flow Datasets”, accepted at *North American Innovative Smart Grid Technologies (ISGT) Conference*; *arXiv preprint*: 2111.01228.

RESEARCH EXPERIENCE

2021 – PRESENT	Graduate Research Assistant Washington Power Electronics Lab, Professor Brian Johnson	UNIVERSITY OF WASHINGTON
SUMMER 2021	NREL SULI Intern Power System Engineering Center, Energy Systems Control and Optimization Group <ul style="list-style-type: none">Developed a Python & Julia software package¹ to efficiently create datasets for training and benchmarking machine learning approaches to AC optimal power flow.	NATIONAL RENEWABLE ENERGY LABORATORY
2020 – 2021	Undergraduate Research Assistant Renewable Energy Analysis Lab, Professor Daniel Kirschen <ul style="list-style-type: none">Researched the impacts of energy storage dispatch assumptions on resource adequacy assessment using the NREL Probabilistic Resource Adequacy Suite.	UNIVERSITY OF WASHINGTON

PROFESSIONAL EXPERIENCE

SUMMER 2020	Electrical Hardware EXCEL Intern Engineering Product Development, Electrification Calibration Group <ul style="list-style-type: none">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.	GENERAL MOTORS
SUMMER 2019	Product Engineering Intern DRAM Quality Assurance Engineering Group <ul style="list-style-type: none">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.	MICRON TECHNOLOGY, INC.

SUMMER 2018	R&D Engineering Intern	SCHWEITZER ENGINEERING LABORATORIES
	<ul style="list-style-type: none"> 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	
	<ul style="list-style-type: none"> 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 , 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.	
SPRING 2020	Power System Design Plans	EE 456
	Planned the design of a collector system for a 120 MW wind farm, created a 7-Year transmission reinforcement plan for a hypothetical utility company, and created a plan for the expansion of the Total Transfer Capacity of the interconnection of power system networks in a modified Western United State power system for the Sustainable Power Systems capstone course, EE 456.	
WINTER 2020	Python Fault Analysis Script	EE 455
	Wrote a Python script that was capable of determining fault currents for a given power system network and fault description.	
SPRING 2020	Python Power Flow Solver	EE 454
	Developed a program in Python that was capable of solving the power flow of a given power system network using the Newton-Raphson method	

¹OPFLearn.jl GitHub Repository