curriculum vitæ of

Trager Joswig-Jones

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EDUCATION

2021 – present	**Ph.D. Candidate,** Electrical Engineering	UNIVERSITY OF WASHINGTON, SEATTLE

Washington Power Electronics Lab

2017 – 2021	**B.S.,** Electrical Engineering	UNIVERSITY OF WASHINGTON, SEATTLE

GPA: 3.94 | Concentration: Power Electronics & Drives, Sustainable Power Systems

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

RESEARCH EXPERIENCE

2020 – 2021	Undergraduate Research Assistant	RENEWABLE ENERGY ANALYSIS LAB

University of Washington, Professor Daniel Kirschen

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

PROFESSIONAL EXPERIENCE

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.

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.

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 potential 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

- Leading 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	2021

Grainger Foundation Power Engineering Endowed Scholarship	2020
Electrical Energy Industrial Consortium Scholarship Recipient	2019
Eagle Scout	2016

Skills

Programming:	Proficient in `Python`[1] and `Julia`[2]. Working knowledge in `Java`, `MATLAB`, 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 Wind Farm Collector System Design   EE 456

Planned the design of a collector system for a hypothetical 120 MW wind farm by considering routing, protection, and relevant standards to create an economical design that balanced capital costs, reliability, and losses.

spring 2020 7-Year Transmission System Plan   EE 456

Created a 7-Year transmission reinforcement plan for a hypothetical utility company to economically meet an N-1 contingency case criteria with the addition of a 120 MW wind farm and projected load growth in the system.

spring 2020 Western US System Stability Design   EE 456

Developed 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 in order to reduce congestion costs and maintenance system stability.

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

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[2] Example projects: Python Fault Analysis Script, Python Power Flow Solver
[2] Example scripts: REAL PRAS Scripts