

curriculum vitae of  
Trager Joswig-Jones

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## EDUCATION

2021 – present	<b>Ph.D. Student</b> , Electrical Engineering Washington Power Electronics Lab	UNIVERSITY OF WASHINGTON, SEATTLE
2017 – 2021	<b>B.S.</b> , Electrical Engineering GPA: 3.94   Concentration: Power Electronics & Drives, Sustainable Power Systems	UNIVERSITY OF WASHINGTON, SEATTLE
	<b>T.A.</b> EE 457: Electrical Energy Distribution Systems	SPRING 2021
	<b>Grader</b> EE 456: Computer-Aided Design In Power Systems	SPRING 2021
	<b>Grader</b> EE 455: Power System Dynamics And Protection	WINTER 2021
	<b>Grader</b> EE 457: Electrical Energy Distribution Systems	SPRING 2019

## RESEARCH EXPERIENCE

2020 – 2021	Undergraduate Research Assistant University of Washington, Professor Daniel Kirschen	RENEWABLE ENERGY ANALYSIS LAB
	<ul style="list-style-type: none"><li>• Researched the effects of energy storage dispatch assumptions on resource adequacy assessment using the NREL Probabilistic Resource Adequacy Suite.</li></ul>	

## PROFESSIONAL EXPERIENCE

2020	Electrical Hardware EXCEL Intern Engineering Product Development, Electrification Calibration Group	GENERAL MOTORS
	<ul style="list-style-type: none"><li>• 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.</li></ul>	
2019	Product Engineering Intern DRAM Quality Assurance Engineering Group	MICRON TECHNOLOGY, INC.
	<ul style="list-style-type: none"><li>• 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.</li></ul>	
2018	R&D Engineering Intern	SCHWEITZER ENGINEERING LABORATORIES
	<ul style="list-style-type: none"><li>• 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.</li><li>• Reviewed the software review specifications for a potential digital relay element and coded this software for testing with a TI digital signal processor.</li></ul>	

## ACTIVITIES

2018 – 2021	Propulsion System Integration Lead Department of Energy, Advanced Technology Vehicle Competition series	UW EcoCAR
	<ul style="list-style-type: none"><li>• 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.</li><li>• Co-authored a technical paper describing the teams hybrid design and integration plans, which received third place in the competition.</li></ul>	

## HONORS

Grainger Endowment Ph.D. Fellowship	2021
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Grainger Foundation Power Engineering Endowed Scholarship	2020
Electrical Energy Industrial Consortium Scholarship Recipient	2019
Eagle Scout	2016

## SKILLS

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Programming:	Proficient in <b>Python</b> <sup>1</sup> and <b>Julia</b> <sup>2</sup> . Working knowledge in <b>Java</b> , <b>MATLAB</b> , and <b>C/C++</b>
Software:	PLECS, Altium Designer, Multisim, Excel
Hardware:	HV Harness Construction, PCB Assembly, MCU Integration

## PROJECTS

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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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<sup>1</sup>Example projects: Python Fault Analysis Script, Python Power Flow Solver

<sup>2</sup>Example scripts: REAL PRAS Scripts