John Schafer

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Education

University of California, Berkeley **2024**
M.S. in Systems Engineering, Department of Civil & Environmental Engineering, GPA: 3.8 *Berkeley, CA*
- Focusing on renewable power systems modeling, control and optimization.

Montana State University, Honors College **2021**
B.S. in Applied Mathematics, GPA: 4.00 *Bozeman, MT*

Montana State University, Honors College **2021**
B.A. in Political Science, GPA: 3.98 *Bozeman, MT*

Relevant Coursework

- Convex Optimization
- Dynamical Systems
- Machine & Reinforcement Learning
- Data-driven Control
- Power Systems Engineering
- Information Management

Professional Experience

Test and Simulation Engineer **2024-Present**
SOLV Energy *Bend, OR*
- Pioneered SOLV Energy's Controller-Hardware-in-the-Loop (CHIL) test lab from platfrm selection (Typhoon), to running full software FATs; condensing the commisioning of SCADA power plant controls
- In charge of high fidelity modeling of PV and BESS sites at inverter level utilizing resources like PSS/E and PSCAD, enabling real time control via an SEL RTAC
- Utilize HIL testbed for troubleshooting, developing and optimizing Power Plant controllers

Critical Infrastructure Analyst - Graduate Internship **Summer 2024**
Lawrence Livermore National Laboratory *Livermore, CA*
- Summer position within the Cyber and Critical Infrastructure Summer Institute focusing on the modeling of power and accompanying SCADA systems.
- Using Python/ MATLAB increase the resiliency of power system infrastructure within a national security context. Research into emerging cyber threats to BESS and Battery Management Systems and their communications.

Solutions Consultant **2021-2022**
commonFont *Bozeman, MT*
- Implemented survey-based SaaS data platforms and BI tools for enterprise-level clients using Javascript, HTML and AWS. Engineered front-end dashboard visualizations and reporting.
- Produced data analysis/visualization using statistical methods and models as well as recommendation documents/strategic presentations.
- Head of a dynamic team within a growing startup that consulted on the technical and business value of SaaS based initiatives such as machine learning tools.

Research

Energy, Controls, & Applications Lab: UC Berkeley **2023-2024**
Member *Berkeley, CA*
- Attended weekly lab meetings regarding the groups research in EV battery management, micro-grid strategies and optimal EV charging.

Optimal V2G Scheduling within an Ideal Microgrid Setting using Deep Q-Learning
Civil Engineering 291
- Semester project utilizing a custom built Deep Q-Learning and Actor-Critic model to develop the optimal charging policy for Vehicle-to-Grid enabled EVs.

Skills

Technical: SCADA, HIL, Typhoon HIL, PLCs, Python, NumPy, Pandas, CVXPY, Scikit-learn, Keras, TensorFlow, MATLAB, Simulink, Git, Power Flow Simulation, DNP3, Modbus
Core Competencies: Technical translation, Interdisciplinary Mindset, Written Communication, Leadership

Interests

hybrid micro-grids - nuclear fission & fusion - batteries - autonomous systems - skiing & trucks