Eran Schweitzer

Curriculum Vitæ

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Education

Sep. 2015– Nov. 2018 **Ph.D. Electrical Engineering**, *Arizona State University*, Tempe, AZ.
Signal Information Network and Energy (SINE) Lab, Director Prof. Anna Scaglione
Dissertation: *Creating, Validating, and Using Synthetic Power Flow Cases: A Statistical Approach to Power System Analysis*.

Oct. 2013– Sep. 2015 **RWTH Aachen University**, *MSc. Electrical Power Engineering*, Aachen, Germany.
Thesis: *Statistics-based Generation Algorithm for Distribution Grid Topologies*

Sep. 2010– Jun. 2013 **Portland State University**, *Post Baccalaureate Electrical Engineering*, Portland, OR.

Aug. 2004– May. 2007 **University of Southern California**, *BA Music (Guitar)*, Los Angeles, CA, *Magna Cum Laude*.

Professional Experience

Feb. 2019– Present **STEAG Energy Services**, *Project Engineer*, Essen, Germany.
Network connection studies and realization.
Design of electrical installation: cables selection, harmonics, transformer sizing, protection coordination, arc-flash calculation, air pressure simulation, etc.
Work on developing new business directions such as sector coupling optimization.

Jun. 2017– Aug. 2017 **Pacific Northwest National Lab (PNNL)**, *Ph.D Intern*, Richland, WA.
Work in the Electricity Infrastructure Integration group on co-simulation of distribution and transmission systems.

May 2015– Sep. 2015 **Amprion (German TSO)**, *Intern*, Brauweiler, Germany.
Energy Market and System Balancing Department. Optimizations, calculations, and assessments with regard to balancing power and renewable energy forecasts.

Nov. 2013– Apr. 2015 **Institut Für Hochspannungstechnik (IFHT), RWTH**, *Wissenschaftliche Hilfskraft (student work)*, Aachen, Germany.
Implementation and adaptation of a mixed integer unit commitment optimization algorithm

Jan. 2015– Mar. 2015 **Institute for Communication Technologies and Embedded Systems (ICE), RWTH**, *Wissenschaftliche Hilfskraft (student work)*, Aachen, Germany.
LaTeX problem/solution sets for lectures: Algorithm Design of Digital Receivers, and Estimation & Detection Theory

Oct. 2013– Nov. 2014 **Institut Für Elektrische Maschinen (IEM), RWTH**, *Wissenschaftliche Hilfskraft (student work)*, Aachen, Germany.
Implementation of a magnetic hysteresis model in the institutes finite element solver

Jun. 2012–Jun. 2013 **Northwest Electromagnetics and Acoustics Research Laboratory (NEAR-Lab)**, *Student Researcher*, Portland, OR.
Active sonar fish–detection research at Portland State University.

2006–2013 **Guitar Instructor**
- 2006–2013 **Private Teaching Studio** *Portland, OR & Los Angeles, CA* Students ages 5–50+
- 2009–2013 **Rose City Music Academy** *Portland, OR* Grade school aged students
- 2009–2011 **Music Lessons Northwest** *Portland, OR* Student ages 3–35+

Software Proficiency

MATLAB — Some examples: development for MATPOWER, various graph theory algorithms, linear power flow implementations, mixed integer optimization, Beamforming, TDOA

Python — Gurobi optimization, graph algorithms, statistical analysis and fitting routines, PowerFactory automatization

Julia — Coupled Infrustructure Co-Simulation Optimization developed for Steag

Git — Github page: `https://github.com/eranschweitzer`

SQL — Created two PostgreSQL databases to query and analyze data obtained from utilities

VBA — Calculation tools, optimizations, and forms built as Excel macros.

Power System Software — DigSILENT PowerFactory, GridLab-D, OpenDSS, PSLF, Power World Simulator

Additional software used — MS Office Suite, Pi system from OsiSoft, Labview, FEMM, HFSS, LTSpice, Adobe Suite

Languages

English	**Fluent**	*language of daily life since age 10*
Hebrew	**Fluent**	*native speaker*
German	**Fluent**	*finished B2 level*
Spanish	**Intermediate**	*basic conversation*

Honors & Awards

2018 IEEE PES General Meeting Best Paper Award

2017 IEEE Phoenix Section Student Award

2017 ASU's Graduate and Professional Student Association *Assembly Service Award*

2015 JARA Best Master Award

Professional Memberships

IEEE, PES

Cigré

Publications

Journals

E. Schweitzer, S. Saha, A. Scaglione, N. G. Johnson, and D. Arnold, "Lossy DistFlow Formulation for Single and Multiphase Radial Feeders," *IEEE Transactions on Power Systems*, 2019.

E. Schweitzer and A. Scaglione, "A Mathematical Programing Solution for Automatic Generation of Synthetic Power Flow Cases," *IEEE Transactions on Power Systems*, 2018.

E. Schweitzer, A. Scaglione, A. Monti, and G. A. Pagani, "Automated Generation Algorithm for Synthetic Medium Voltage Radial Distribution Systems," *IEEE Journal on Emerging and Selected Topics In Circuits and Systems*, 2017.

A. B. Birchfield, **E. Schweitzer**, M. H. Athari, T. Xu, T. J. Overbye, A. Scaglione, and Z. Wang, "A metric-based validation process to assess the realism of synthetic power grids," *Energies*, vol. 10, no. 8, 2017, ISSN: 1996-1073.

Conferences

S. S. Saha, **E. Schweitzer**, A. Scaglione, and N. G. Johnson, "A framework for generating synthetic distribution feeders using openstreetmap," in *2019 North American Power Symposium (NAPS)*, IEEE, 2019, pp. 1–6.

E. Schweitzer, J. Hansen, and J. Fuller, "Transmission and distribution co-simulation with possible distribution loops," in *2018 IEEE Power and Energy Society General Meeting*, (Selected Best Paper), 2018.

E. Schweitzer, T. Xu, A. B. Birchfield, A. Scaglione, T. J. Overbye, R. Thomas, and Z. Wang, "Towards operational validation: Mapping power system inputs to operating conditions," in *Proceedings of the 20th Power Systems Computation Conference*, 2018.

M. Jamei, **E. Schweitzer**, A. Scaglione, and K. W. Hedman, "Gas and electric grid unit commitment with coordinated n-1 generator contingency analysis," in *2018 Power Systems Computation Conference (PSCC)*, IEEE, 2018, pp. 1–7.

E. Schweitzer, A. Scaglione, and K. Hedman, "Assignment of electrical properties to power grid topologies," in *Proceedings of the 51st Hawaii International Conference on System Sciences*, 2018.

E. Schweitzer, A. Scaglione, and R. Thomas, "The validation of synthetic power system cases," in *IREP'2017 Symposium*, 2017.

E. Schweitzer, A. Scaglione, R. Thomas, and T. Overbye, "Analysis of the Coupling Between Power System Topology and Operating Condition for Synthetic Test Case Validation," in *2016 Grid of the Future Symposium*, CIGRE US National Committee, 2016.

E. Schweitzer, K. Togawa, T. Schloesser, and A. Monti, "A Matlab GUI for the Generation of Distribution Grid Models," in *ETG-Fachbericht-International ETG Congress 2015*, VDE VERLAG GmbH, 2015.