# David Schwartz

Machine Learning (ML) Engineer (Intern), Garmin Intl., Inc.
Graduate Research Assistant, The University of Arizona
schwartz.david.michael@gmail.com
https://uweb.engr.arizona.edu/∼dmschwar


## SKILLS

**Programming Languages:** Python, C, C++, Matlab, Java, Verilog, VHDL
**Other Computer Tools:** Git, PyTorch, Tensorflow, SQL, Latex, Unix, Xilinx ISE, XPS, Vivado, Synplify

## EDUCATION

**University of Arizona**, Tucson, AZ — **Aug. 2017 - Present; GPA: 3.8/4.0**
*Ph.D. in Electrical and Computer Engineering*

**University of Arizona**, Tucson, AZ — **Aug. 2015 - May 2017; GPA: 3.7/4.0**
*M.S. in Electrical and Computer Engineering*

**University of Arizona**, Tucson, AZ — **Aug. 2010 - May 2015; GPA: 3.2/4.0**
*B.S. in Electrical and Computer Engineering*
*B.S. in Mathematics*

## EXPERIENCE

**Machine Learning Engineer Intern, Garmin (Aug. 2022 - Present)**
Development of efficient and scalable ML training and inference systems for embedded and online Garmin fitness, marine, and animal products

**Graduate Research Assistant, Univ. of Arizona (Aug. 2018 - Present)**
Research in adversarial machine learning and implementation of deployable machine learning pipelines in applications to cancer detection from coherence tomography and cybersecurity (Supervisor: Dr. Gregory Ditzler)

**Graduate Research Assistant, Univ. of Arizona (Aug. 2015 - May 2017)**
Research on information theory, coding theory, detection and estimation, investigated coding and information theoretic properties of neural codes utilized in spatial navigation tasks (Supervisor: Dr. O. Ozan Koyluoglu)

**Computer Engineering Intern, Univ. of Arizona (Jul. 2014 - Aug. 2015)**
Development of 10GbE transceivers to safely transport measurements acquired by muon detectors at the large hadron collider and verified that designs consistently met power and latency constraints (Supervisor: Dr. Ken Johns)

## HONORS and AWARDS

Certificate for Service and Dedication to Research Experiences for Undergraduates (2022)
Graduate Tuition Scholarship at University of Arizona
Won 'Most Robust Design' award for Senior Design Project at University of Arizona (2015)

## PUBLICATIONS

· D. Schwartz and G. Ditzler, "On Reducing Adversarial Vulnerability with Data Dependent Stochastic Resonance," 2022 IEEE Symposium Series on Computational Intelligence (SSCI), Singapore, Singapore, 2022, pp. 1334-1341.

· D. Schwartz, N. Thurston, T. Sawyer, G. Ditzler, J. Barton, "Ovarian cancer detection using optical coherence tomography and convolutional neural networks." Neural Computing and Applications (2022)

· D. Schwartz, G. Ditzler, "Bolstering Adversarial Robustness with Latent Disparity Regularization." In 2021 International Joint Conference on Neural Networks (IJCNN), IEEE, (2021)

· D. Schwartz, O. O. Koyluoglu, "On the organization of grid and place cells: Neural denoising via subspace learning." Neural computation 31, no. 8 (2019)

· Z. Liang, D. Schwartz, G. Ditzler, O. O. Koyluglu "The impact of encoding–decoding schemes and weight normalization in spiking neural networks." Neural Networks 108 (2018)

· D. Schwartz, O. O. Koyluoglu, "Neural noise improves path representation in a simulated network of grid, place, and time cells." Cosyne, February, no. III-42 in Cosyne abstracts (2017).

· M.J. Ragone, S. Gianelli, D. Schwartz, L. Su, O.O. Koyluoglu, J.-M. Fellous, "The role of hippocampal replay in a computational model of path learning" Program No. 263.14. San Diego, CA: Society for Neuroscience, 2016.

· D. Schwartz, O.O. Koyluoglu, "A hybrid code from grid and place cells" Program No. 183.26. San Diego, CA: Society for Neuroscience, 2016

## OUTREACH and SERVICE

Judged at SARSEF science fair in Tucson in 2016, 2017, 2018, and 2019.
Reviewed for *Neural Networks*, *IEEE Transactions on Neural Networks and Learning Systems*, *International Joint Conference on Neural Networks*