Paul Rademacher

Summary

Statistical learning researcher with theoretical focus and software skill to implement novel algorithms. Passionate about open source, reproducible AI/ML research. Topics of interest include Bayesian inference, statistical signal processing, reinforcement learning, and optimization.

Education

2013–Present   **Doctor of Philosophy**, *The George Washington University*, Washington, D.C.
Electrical Engineering, *GPA − 4.0*

2010–2011   **Master of Engineering**, *Cornell University*, Ithaca, N.Y.
Electrical and Computer Engineering, *GPA − 3.6*, *Cum Laude*

2006–2010   **Bachelor of Science**, *Cornell University*, Ithaca, N.Y.
Electrical and Computer Engineering, *GPA − 3.0*, Minor in Engineering Management

Experience

Vocational

2011–Present   **Electronics Engineer**, *U.S. Naval Research Laboratory*, Washington, D.C.
Radar Division, Advanced Signal Processing Section
- Designed supervised/reinforcement learning algorithms and Python software packages for cognitive resource management
- Generalized the Viterbi algorithm for Markov processes of any order, developed a computationally efficient implementation
- Used deep learning to implement sequential classifiers for speech recognition using reflected radar transmissions
- Researched novel Bayesian learning functions to enable consistent model estimation with maximally flexible regularization
- Developed automatic target identification software, including feature extractors and ensemble decision functions

2009   **Engineering Intern**, *Northrop Grumman Corporation*, Melville, N.Y.
Wrote MATLAB programs to perform pulse-Doppler analysis of corrupted test data and automate repairs

Computer skills

Programming	Python, MATLAB
Development	Git, LaTeX
Libraries	PyTorch, Tensorflow, Gym, Scikit-Learn, Numpy, SciPy, Pandas

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Distinctions

- Recipient of George Washington University High Academic Performance Award
- Recipient of Cornell University John McMullen Dean's Scholarship
- Recipient of National Merit Scholarship from Northop Grumman Corporation

Select Publications

[1] Paul Rademacher and Miloš Doroslovački. Bayesian learning for classification using a uniform dirichlet prior. In *2019 IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, pages 1–5, 2019.

[2] Paul Rademacher and Miloš Doroslovački. Predictive distribution estimation for bayesian machine learning using a dirichlet process prior. In *2019 53rd Asilomar Conference on Signals, Systems, and Computers*, pages 1941–1945, 2019.

[3] Paul Rademacher and Kevin Wagner. Efficient bayesian sequential classification under the markov assumption for various loss functions. *IEEE Signal Processing Letters*, 27:401–405, 2020.

[4] Paul Rademacher and Miloš Doroslovački. Bayesian learning for regression using dirichlet prior distributions of varying localization. In *2021 IEEE Statistical Signal Processing Workshop (SSP)*, pages 236–240, 2021.

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