Philippe Proctor

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Skills

Software Python (NumPy, PyTorch, Scikit-learn, SciPy, Pandas, Matplotlib, MPI4Py), MATLAB, C, Git

Expertise Reinforcement learning, deep learning (recurrent neural networks), power spectral density estimation, recursive Bayesian estimation (particle and Kalman filter), Monte Carlo methods, numerical optimization, time-series analysis, exploratory data analysis

Education

M.Sc. ECE — Portland State University *2021*

Focus: Signal Processing and Machine Learning, GPA: 3.9/4.0
Courses: Deep Learning Theory and Practice, Math Foundations of Machine Learning, Discrete Time Processing, Random Processes, Numerical Optimization I & II, Microprocessors I & II, Linux Device Drivers

B.Sc. — University of California Santa Barbara *2016*

Major: Biopsychology

Experience

Portland State University *June 2019 - Aug. 2021*

Graduate Research Assistant

- Constructed a novel deep reinforcement learning architecture using PyTorch that achieved a success rate of 95% in a complex nuclear source search task outperforming gradient search by 68%
- Developed deep neural network model for radiation source localization application using PyTorch that matched performance of a Markov chain Monte Carlo method with perfect knowledge
- Mentored 3 NSF-funded undergraduate students on computational modeling research projects and ran lab meetings for 15 students
- Presented research results and project progress at 3 annual reviews for funding agency

Medical Micro Instruments *June 2018 - Sept. 2018*

Instrument Test Engineer Intern

- Designed instrument life cycle test protocol for main operational unit that revealed mechanical design flaw resulting in component redesign that increased instrument lifespan by 9%

Carpe Data *June 2016 - Jan. 2017*

Data Analyst Intern

- Created data cleaning script in Python using Pandas to remove duplicates and flag feature input errors, used in an exploratory data analysis to assess efficacy of potential company asset
- Presented investigative report of company asset performance to management leading to integration of asset into product pipeline
- Proposed 2 novel data sources for use in the predictive modeling

Publications

Proximal Policy Optimization for Radiation Source Search [MDPI Journal of Nuclear Engineering] *2021*

***Proctor P.**, Teuscher C., Hecht A., Osiński M.* — Accepted

Awards

2020 Maseeh College of Engineering and Computer Science Outstanding MS Student Award