KENNETH JABON

Education

Boston University, September 2020 - GPA: 3.94
M.S., Materials Science and Engineering
University of Illinois, Urbana-Champaign, May 2016 - GPA: 3.58
B.S. with Honors, Materials Science & Engineering
Minor, Computer Science (*note: B.S. sans 12 credits*)
Relevant Coursework: Computational MSE, Numerical Methods, Database Systems, Data Structures, Computer Architecture, Thermodynamics/Kinetics in Materials, Quantum Structures and Photonic Devices

Experience

RL/DL Self Study and Non-Compete completion, April 2022 - present; **kjabon.github.io** for details.
- Imitation learning (PWIL) for acrobot swing-up. Learning from expert: a classical ILQR controller.
- "CoachRL" to organize personal habits. Large (1e15) discrete action space solved by splitting problem into 4 PPO agents, and hard-coding known solutions. Modified Acme RL algorithm backends for arbitrary observation/action space combinations: MultiDiscrete and continuous (for next item, below).
- 7-DOF robot to play air hockey, ongoing. MPO wraps classical controller. *Negative IP:* NN primitives to replace classical controller (lack compute), brax to replace Mujoco env (lacks programmatic flexibility).
- Re-implementation of VPG in JAX/Acme, well-versed in PPO, MPO, MuZero papers/implementations.
- Courses: OpenAI Spinning Up, UCB DRL Bootcamp, Coursera: DL, Image Processing, GANs, and NLP

Photonic Automation Engineer, Analog Photonics, December 2018 - April 2022
- Developed edge-coupled electro-optical testing of photonic chips on 300mm silicon wafer (publication)
  - Wrote back-end and GUI for CM300 wafer prober for 6-axis optical alignment. (C#/Matlab)
- Wrote internal messaging system for optical phased array-based LiDAR. (C/C#)
- Studied higher-order mode coupling to second order microring filter for device redesign. (Lumerical/Matlab)

Graduate Researcher, Popović Group, ECE BU, May 2019 - December 2021
- Designed and demonstrated silicon photonic microring-based photon pair source (publication)
  - Device improves four-wave mixing efficiency by tuning ring dispersion, and sets the purity and escape efficiency of the output photons by setting coupling to rings with a 2-point coupler.
- Developed a custom finite difference frequency domain Maxwell's equations solver (Matlab).

Process Engineer, IPG Photonics, May 2017 - December 2018
- Redesigned production station and developed program to align volume Bragg gratings (VBG) for wavelength stabilization of laser diodes. The same for automated scribing of laser bars. (C#)

Publications

K. M. Jabon, I. Wang and M. A. Popović, "Dispersion-compensated microring photon pair source design with configurable purity–pair rate–heralding efficiency tradeoff," *2022 Conference on Lasers and Electro-Optics (CLEO)*, San Jose, CA, USA, 2022, pp. 1-2.

K. M. Jabon, C.V. Poulton, …, R.P. Millman, D. Atlas, M.R. Watts and E. Timurdogan, "Edge-Coupled Active and Passive Wafer-Scale Measurements on 300mm Silicon Photonics Wafers," in Proceedings of the Optical Fiber Communication Conference (OFC) 2021, OSA Technical Digest, paper M3A.1.

Languages

Experienced: Python, JAX/Tensorflow/Acme, C#, C++, C, Matlab, Java. Intermediate: SQL, MIPS, Spanish.