Nicholas Pun

Math Enthusiast • Software Developer

nicholaspun99@gmail.com nicholaspun.github.io /in/nicholaspun nicholaspun

Skills

C/C++, Haskell, Java, JS, Julia, Lean, MATLAB, Python, Ruby, Scheme, Ansible, CircleCI, Docker, Kubernetes, Keras, Pytorch, Tensorflow

Experience

Software Development Engineer — Palo Alto, CA

Level 5 (Woven Planet) — May 2021 – Current

- (NDA) Develop tools and 3D visualizations for development, validation and evaluation of autonomous vehicle software

Software Development Engineer — Vancouver, BC

Amazon | Route 53 — June 2020 – May 2021

- (NDA) Design and maintain scalable systems using AWS services to meet customer demands

Engineering Intern — San Francisco, CA

Credit Karma | Developer Efficiency Team — May 2019 – Aug. 2019

- Designed python-based tooling for the deployment and servicing of developer systems (K8s clusters on EC2)
- Improved monitoring of said systems by creating a lightweight Typescript service to alert on health-related metrics
- Replaced archaic Jenkins frontend with a Ruby slackbot to improve end-user experience with above tooling
- Gained familiarity with common infrastructure tooling: Ansible, CircleCI, Docker, Jenkins, and kubectl

Software Developer Intern — Kitchener, ON

Vidyard | Analytics Team — Sep. 2018 – Dec. 2018

- Diagnosed issues with YT data analytics layer (Ruby on Rails) and performed a rewrite to deliver more accurate data
- Improved performance of video analytic service (Node) by implementing data recovery procedure
- Ensured GDPR compliance throughout services and loggers

Software Developer Intern — San Francisco, CA

Freckle Education — Jan. 2018 – Apr. 2018

- Created new interfaces for over 9000 school administrators and early learners in React
- Expanded frontend test suite coverage by adding Jest logic and snapshot tests and maintaining QA testing suite
- Learned the basics of Haskell by making small backend bug fixes and adding Hspec unit tests

Projects

Undergraduate Research

University of Waterloo

- Research techniques in generalized Shannon sampling theory and applied methods towards analyzing patterns in prime gaps and jumping champions.
- Preprint: `https://arxiv.org/abs/1808.00572`

ARAMNet

- Worked on a toy probability problem concerning fair selection schemes in unequal settings
- Proved the optimal scheme in the easy case and created a neural network framework in Pytorch to improve efficiency when simulating more complex settings

Decentralized Secret Santa

- Demonstration of a decentralized algorithm for Secret Santa

IZ*Net

- Created a custom face detection (YOLO) and recognition neural network model to decent accuracy using tensorflow

Education

University of Waterloo

Bachelor of Mathematics — 2015 – 2020

Double Majored in Computer Science and Combinatorics & Optimization, with Business Option

Relevant Coursework: Statistical Machine Learning, Distributed Systems, Randomized Algorithms, Combinatorial Optimization, Types and Programming Languages

deeplearning.ai

Deep Learning & GANs Specializations

- Awarded certificates for completing their 5-course (deep learning) and 3-course (GANs) sequences
- Implemented car detection, speech recognition, music synthesis models and more in the deep learning specialization
- Developed state-of-the-art GANs models (StyleGAN, Pix2Pix, CycleGAN) applied towards image generation and image-to-image translation