Nathan Epstein

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Professional Experience

Kaji.tech *July 2016 to Present*
Chief Technology Officer
Two-person start up developing a system to manage office documents (https://www.kaji.tech/)
-Developed cloud-based computer vision system to process scanned documents, now in Beta.

Global and Medical Support Group *September 2017*
Non-profit organization providing skilled volunteer medical support and training in war-torn regions
-Created a tablet application to manage medical information in the field.

Zenimax Media Company, Bethesda Softworks *July 2011-Jan. 2012*
Quality Assurance Team Member
-Tested game play to find bugs, documented errors, and worked with engineers to resolve bugs in award-winning game (Elder Scrolls V: Skyrim).

Technical Skills

Languages: C, C++, OpenCL, Cuda, Python, Matlab, Javascript, Java
Databases: LMDB, MongoDB
Other: Linux (use, remote use, admin.), AWS (EC2 use and admin), Heroku, GIT, Deep Learning (Pytorch, Tensorflow, Tensorflow.js), Parallel Processing (OpenCL on multi-GPU, Cuda, SLURM, WebGL), Web Development (JavaScript front-end, Javascript or Python back-end)

Education

B**.S. In Computer Science** University of Maryland Baltimore County (UMBC) *Class of 2016*
-Cumulative GPA: 3.36 / 4.00
Courses: Software Engineering, Machine Learning, Artificial Intelligence, Computer Vision, Linear Algebra, Discrete Math, Calculus, Statistics

Other Experience

UMBC Go Club, President *Dec 2013- June 2016*
-Organized meetings and coordinated events with other student groups.
-Sponsored a regional American Go Association (AGA) Tournament at UMBC in 2014.
-Achieved Shodan (1-dan) AGA rating in tournament play.
Go Teacher
-Taught UMBC students and the public at the Cherry Blossom Festival in Washington D.C.

Selected Projects:

AGA EJournal Web Broadcasting
-Planned broadcast and managed technical team that configured, debugged, and operated audio and video network and web streaming equipment for 2018 US Go Congress web stream, reaching peak 12000+ concurrent viewers.
-Directed broadcast featuring Michael Redmond 9 Dan and Chris Garlock on commentary from the National Go Center in Washington DC.

OEIS Volunteer Research
-Added original sequences and animations to existing sequences in the online enyclopedia of integer sequences: A320030, A102376, A072272

TensorFlow Automata
-Created tool for animating cellular automata in browser using convolution in Tensorflow.js https://aeium.github.io/tensorFlowAutomata/

729 Puzzle Game
-Created Puzzle Game similar to 2048 but using powers of 3 in a hexagon instead of powers of 2 in a square. https://aeium.github.io/729/

Ready, Set, Go! Parts 1 and 2
-Directed a 2 person project that predicted Go Moves using Convolution Neural Networks and the Caffe framework. Designed experiment and network. Wrangled and procedurally expanded dataset.
-Assembled and maintained deep learning system.
-Used Structure vs Noise Classification to learn and visualize Go boards. Engineered network, developed methods to visualize network state and learning.
-Video presentation link : https://www.youtube.com/watch?v=-Yrwyu6z3V8

RSA Public Key Factoring
-Developed Large Integer Factoring for RSA Encryption on High Performance Cluster.
-Gained experience with high per cluster and SLURM. Learned RSA encryption and associated number theory.

Complete Five-Neighbor Automata Survey
- Surveyed 4.3 Billion Cellular Automata for edge of chaos complexity multi-gpus via OpenCL.
-Used OpenCL and AMDAPPSDK for large computational tasks.
-Found edge of chaos automations.