Benjamin Killeen

github.com/bendkill

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Education

University of Chicago — Chicago, IL
Bachelors in Computer Science — *Expected: June 2019*
Minor in Physics — *GPA: 3.760*

Experience

Epic Systems — Madison, WI
Software Development Intern — *June 2018 - August 2018*
- **Predictive Modeling**: Added custom machine learning functionality to SlicerDicer, a web-based tool enabling clinicians to investigate health data.

IBM Research - Almaden — San Jose, CA
Research Intern — *June 2017 - September 2017*
- **Systolic Data Flow of CNNs**: Developed algorithms for systolic data flow of Convolutional Neural Networks with analog-memory-based deep learning. Simulated forward propagation time and estimated a speedup over state-of-the-art GPUs by two orders of magnitude.

University of Chicago — Chicago, IL
Research Assistant — *June 2016 - March 2017*
- **Cosmic Rays**: Analyzed the Fermi LAT database for possible gamma ray events from Jupiter's Great Red Spot. Concluded the GRS emits no significant gamma rays above 20 MeV.

Patents and Publications

- Burr, Geoffray and **Killeen, Benjamin**. Efficient Processing Convolutional Neural Network Layers using Analog-Memory-Based Hardware. Provisional U.S. Patent filed October 12, 2018.

- Burr, G., Ambrogio, S., Narayanan, P., Tsai, H., Shelby,, R., Boybat, I., Nolfi, C.D., Sidler, S., Giordano, M., Bodini, M., Farinha, N., **Killeen, B.**, Cheng, C., Jaoudi, Y. (2018) "Equivalent-Accuracy Accelerated Neural Network Training using Analog Memory." *Journal Nature.*

Skills

Python • Tensorflow • C • C# • MatLab • POV-Ray • JavaScript • LaTeX • Haskell
Experimental Design • Scientific Writing • Communication Skills

Projects

- **Artifice**: Applying computer vision to high precision object detection in laboratory images, driven by Deep Neural Networks.
- **Creative Writing**: Pursues independent creative writing projects: short stories, fantasy novel.

Coursework

Computer Vision • Machine Learning on Big Data • Operating Systems • Honors Combinatorics
Scientific Visualization • Honors Algorithms • Honors Discrete Math • Computer Systems