Jayavanth Shenoy

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EDUCATION

University of Southern California — **Los Angeles, CA**
Master of Science in Computer Science (GPA 3.7/4.0) — **Spring 2016**

NMAM Institute of Technology — **Nitte, India**
BE in Computer Science and Engineering (GPA 9.2/10) — **May 2012**

Graduate Coursework: Probability and Statistics, ML, Applied NLP, Information Retrieval, AI, HPC

SKILLS

Languages: C, C++, Python
Machine Learning: PyTorch, Tensorflow
Parallel Programming: CUDA, OpenCL, OpenMP
Infrastructure: Docker, Amazon AWS, Google Cloud, Kubernetes, Firecracker VM
Microcontroller: ESP32

WORK EXPERIENCE

Onai (onai.com) — **San Jose, CA**
Programmer — **Jun 2016 - Nov 2018**

- Developed and deployed Docker containers for graph computation, machine learning.
- Developed compute engine which features training and inference of deep neural networks, exposes APIs for machine learning and graph algorithms. Deployed compute engine on Amazon AWS.
- Developed a fully homomorphically encrypted neural networks, and an MPC (Secure Multi-Party Computation) program for image classification *[NSF Learning on Confidential Data Phase I]*

R&D Computer Systems Engineer — **Nov 2018 - Current**

- Designed and developed an algorithm that can integrate any domain data with NEXRAD's data. The generated dataset can be used in an automated predictive modeler to make predictions on the queries about the domain data *[NOAA Enabling the Rapid Creation of Custom Predictive Models with GOES and NEXRAD Data Phase I]*
- Developed and deployed Firecracker Virtual Machines that facilitate cross-institutional cryptographic querying of COVID-19 medical records across multiple parties, without any participant ever revealing any sensitive information or results to any participant *[NSF Accelerating Understanding of COVID-19 Biology and Treatment Via Scaled Medical Record and Biosimulation Analytics Phase I]*
- Designed and developed a Confidential Data Manager using Firecracker Virtual Machine and CrypTen to retrieve confidential data and train a machine learning model jointly across multiple institutions. *[NSF Learning on Confidential Data Phase I and Phase II]*
- Software development and hardware research for x86-based systems, Raspberry Pi, and ESP32-S3 microcontrollers for IoT applications.
- Automated production of music videos and annotated slide shows with forced alignment of transcripts.
- Software development and hardware research for IoT devices *[NCATS ASPIRE]*

USC Information Sciences Institute (isi.edu) — **Marina Del Rey, CA**
Graduate Research Assistant [ISI Computer Vision Group] — **Dec 2015 - May 2016**
Supervisor: Prof. Prem Natarajan, Stephen Rawls.

- Improved OCR: Experimented with different layers of the Deep Neural Network and different configurations of LSTM layers to achieve the least Character/Word error rate.

Onai (formerly Onu Technology Inc.) (onai.com) — **San Jose, CA**
Intern — **Summer 2015**

- Scaled Gunrock to handle graphs with >3 billion edges on GPUs
- Developed a face recognizer using Torch7. The model had a Precision of 0.91 on LFW ; F1 of about 0.94 on internal face dataset

AMD — **Bangalore, India**
Software Development Engineer - 2 — **Jun 2012 - Jul 2014**

- Completed several design, development, testing and release cycles of Bolt. (http:github.com/HSA-Libraries/Bolt)
- Optimized parallel reduction routines by up to 40% on AMD GPUs.
- Developed C++ AMP iterators for Bolt: First implementation on heterogeneous processors.

Tata Computational Research Laboratories — **Pune, India**
Project Intern — **Dec 2011 - Mar 2012**

NMAM Institute of Technology — **Nitte, India**
Summer Intern — **May 2011 - Aug 2011**

- Bit Level Single-Indexing of Sparse Matrices for GPU Architectures: Optimized and Benchmarked a novel data structure for Sparse Matrix-Vector Multiplication (SpMV). [HiPC Poster 2011]

RESEARCH [Parallel Computing, NLP]

- Presented a poster paper at the 18th International Conference on High Performance Computing (HiPC) - Student Research Symposium 2011.
- Presented a full paper on OpenCL Compiler Optimizations at CSI-Advances in Cloud Computing 2012.