Shyama Sankar Vellore

5860 Darlington Raod, Apartment 1, Pittsburgh, PA 15217

(+1) 412-218-4765 | svellore@andrew.cmu.edu | www.linkedin.com/in/ShyamaSankarVellore

Education

Carnegie Mellon University — *Pittsburgh, PA*

Master of Science, Electrical and Computer Engineering, **GPA: 3.95/4.00** — *Aug 2015 - Exp. Dec 2016*

- Teaching Assistant for Cloud Computing (15-619) in Fall 2016
- Member of Eta Kappa Nu Honor Society
- **Courses:** Real-time Embedded Systems (18-648), Cloud Computing (15-619), Foundations of Computer Architecture (18-640), Intro to Computer Systems (15-213), Internet of Things (18-848D), Java for Smartphone Development (18-641)
- **Current:** Computer Networks (15-641), Storage Systems (18-746), Distributed Systems (15-640)

University of Calicut — *Kerala, India*

Bachelor of Technology, Electronics and Communication Engineering, **GPA: 8.58/10** — *Aug 2009 - May 2013*

- First Class with Honors, Central Sector Scholarship - Government of India

Skills

Languages:	Java, C, Python, Bash, HTML, CSS, Go	**Frameworks:**	Android, Hadoop
Database:	MySQL, SQLite, HBase, MongoDB	**Cloud:**	Amazon AWS, Microsoft Azure
Embedded:	Embedded Linux, x86, x86-64	**Platforms:**	Linux, Mac OS X, Windows

Experience

Carnegie Mellon University — *Pittsburgh, PA*

Graduate Research Assistant- Cloud Computing (Prof. Majd F.Sakr) — *May 2016 - Present*

- Involved in the development of cost monitoring and log analysis tools for AWS resources.
- Extending the full-stack Django application used for Cheat Checking in the Cloud Computing (15-619) course.

Siemens Technology and Services — *Bangalore, India*

Associate Engineer- Design and Development (Healthcare sector) — *Jul 2013 - Jun 2015*

- Designed and developed features like segment linking and cardiac planes for Siemens 'syngo.via' Computed Tomography(CT) Perfusion applications using .NET C# following the Agile methodology.
- Developed automated test suite for ensuring the correctness, stability, quality and performance of Neuro Perfusion and Dynamic Angio applications as well as the post-processing algorithms used with CT scanners.
- Reduced the execution time of existing automated tests by 15% through code and use-case optimizations.
- Improved the effectiveness of the verification suite by automating 8% of the manual test-cases.

Projects

Carnegie Mellon University — *Pittsburgh, PA*

- **Real-time Resource Reservation Framework in Linux Kernel**: Developed a real-time resource reservation framework which allowed applications to specify their demands and then enforced and guaranteed availability by using Resource Kernel approach. Added SysClock CPU frequency governor and list-partitioning heuristic for power aware scheduling.
- **Twitter Analytics on Cloud**: Designed and developed web-servers that can handle thousands of requests per second; and deployed it on Amazon Web Services. Performed ETL on 1TB of Twitter data using Hadoop MapReduce and loaded into both MySQL and HBase. Improved throughput using replication, sharding and database optimizations.
- **Out-of-Order Execution Engine using gem5 simulator**: Implemented and analyzed YAGS and Gshare branch predictors with 92-95% efficiency. Simulated Tomasulo's algorithm for dynamic instruction scheduling and data-flow hazard resolution. Simulated an L1 Cache with custom set size and associativity using LRU and LFU eviction policies.
- **Computer Systems projects in C**: Developed a Dynamic Memory Allocator which could handle malloc, calloc, realloc and free requests. Programmed a mini UNIX shell which supported basic job control, signalling and I/O redirection.
- **Consistency in Distributed Key-Value Stores**: Implemented strong consistency and eventual consistency policies on a distributed and replicated key-value store that could handle concurrent read/write requests from multiple users.
- **Autoscaling- Horizontal and Vertical Scaling**: Implemented Autoscaling of data center instances using Java SDKs for both Azure and AWS. Made use of Amazon CloudWatch to monitor the traffic and make scaling decisions.
- **Indoor Positioning System using iBeacons**: Developed a location tracking system using iBeacons deployed in a retail store. Built an Android application that allowed users to create a shopping list and guided them through the store.
- **An Android Application providing Location Reviews**: Built an application that provided location reviews which were obtained by crowdsourcing geotagged posts. Implemented features like adding friends and messaging.

University of Calicut — *Kerala, India*

- **Ultrasonic 3D Trilateration and Modelling System**: Designed and developed an optimal trilateration algorithm on STM32 ARM Cortex-M4 processor. Built a GUI application using Python for 3D visualization.
- **Semi-automated Multi-storied Car Parking System** with automatic free slot detection and reservation.