

# Vivitsu Maharaja

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## EDUCATION

**Master of Science**, Electrical & Computer Engineering  
University of Florida, Gainesville, FL.

May 2014  
GPA: 3.33/4.0

**Bachelor of Engineering**, Electronics & Communication  
Dharmsinh Desai University, Nadiad, India.

May 2011  
GPA: 62/100

## EXPERIENCE

**Senior Software Engineer**, Applied Intelligence, IO Data Centers, San Francisco, CA

Sep 2014 - Feb 2015

- Developed a data processing pipeline using **Apache Pig** to model the power profile of a datacenter using accumulated sensor data, as part of a larger effort to develop a data analytics platform using the **Apache Hadoop** ecosystem.
- Implemented a Pig **UDF (User-defined functions)** library in **Java** as part of a 2 person team to handle custom processing of input data including parsing, datetime handling and calculating statistics.
- Responsible for development of the platform backend.

**Embedded Engineer**, Volansys Technologies, Ahmedabad, India

November 2011 - July 2012

- Developed & maintained a **USB 2.0 (EHCI)** driver, to allow clients on a LAN to boot using an USB to Ethernet adapter.
- Developed components to interface with the **PCI & BIOS** subsystems in order to manage the complete **state machine** of the host controller & maintain driver compatibility with adapters from multiple vendors.
- Developed a network driver in **C** to allow multiple broadcast domains in a router to form a **VLAN (Virtual LAN)**.

## PROJECTS

**Dropbox File Uploader** using Python

January 2015

- Implemented a python program using the Dropbox API that will upload a file to a user's Dropbox from a URL.

**Distributed File System** using Java

August 2013 - December 2013

- Designed & implemented a distributed filesystem with a peer-to-peer architecture & chunk based object storage.
- Developed software daemons to detect & react to node failures (fault-tolerance) & ensure data consistency.
- Developed a multi-threaded client application to communicate with the cluster and store data on the filesystem.

**Performance Evaluation of Information Retrieval Systems** using Java

November 2013

- Benchmarked the indexing time, compression ratio, recall & indexing algorithm of an Apache Solr retrieval system.
- Designed a schema to perform spelling corrections and clustering of records using Lucene's Tokenizers & Analyzers.
- Developed an application in Java to automate the record indexing process.

**Web Service for Location Based Applications** using Go & Redis

April 2013

- Designed and implemented a multi-threaded HTTP server that serves webpages based on a user's GPS co-ordinates.
- Scaled the server to serve 10,000 HTTP requests per second using goroutines.
- Developed a multi-threaded client simulator which makes multiple HTTP requests to the server using goroutines.

**Distributed Fault-Tolerant Stock Exchange Server** using Java & JGroups

April 2013

- Implemented a stock exchange server that used fault-tolerant, virtually synchronous replicas to perform stock trades.
- Enhanced the system so that client information, trade requests & stock data are preserved across node failures.

Additional projects include **Gossip based Topology Management in Peer-to-Peer Systems** using C, **DNS Server** using Java RMI, **Totally-ordered Multicasting using Lamport's logical clocks** using Java, **Performance Evaluation of Open vSwitch & Linux Bridge**.

## SKILLS

- Programming Languages: Java, C, Go, Python, Bash
- Experience with Apache Pig, Hadoop, Redis, Riak, Solr, GNU Make, Apache Maven, Git & SVN.
- Knowledge of Data Structures & Algorithms, Embedded Systems, Virtual Networks.

## COURSEWORK

Computer Architecture, Probability & Random Processes, Computer Networks, Distributed Computing, Cloud Computing, Autonomic Computing, Information Retrieval (Guided Research), Virtual Computers.