Rahul Prabhu

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EDUCATION

- **Masters of Science**, Computer Engineering *May 2015*
  The University of Texas at Dallas
- **Bachelors in Engineering**, Electrical Engineering *May 2013*
  M S Ramaiah institute of technology, Bangalore, India

WORK EXPERIENCE

- *Software Developer Intern*, **CampusCribz** *Aug 2015-present*
  · Working as a full stack engineer with emphasis on backend development (node.js, python, mongoDB)
  · Working closely with the CTO implementing core features optimizing database queries by modifying the database so requests get faster
  · Also working on front end using various open source API's such as jQuery, maps API

ACADEMIC PROJECTS

- **Web app to store your todo items** *(node.js, MongoDB,Express, Angular, objective-C)*
  Designed the app using Node.js and express framework for the backend and used NoSQL DB mongo to store in a schema less data structure, followed MVC structure. Google analytics was used for the data simulation
  REST APIs were created and requests were sent from the front end which was implemented using angular.
  An iOS app was also created for the the same which worked with the same backend using objective C.
- **A cool email service***(node.js, MongoDB,Express, Angular, Python)*
  Implemented a cool email service using Angular for the backend and added functionality using node.js and Express for the backend to receive REST APIs. Added email functionality using Python.
  The email service was intelligent to switch over to a new service if the current email service fails.
- **Image Pattern recognition on desktop PC and ARM Based Dev board***(Python, OpenCV, embedded C)*
  Pattern recognition on a desktop PC and then implement the same on an ARM based platform with libraries for image extraction, FFT operations etc., and using openCV in PYTHON. The performance was then compared.
- **Modifying the Unix V6 file system***(C++, Unix , STL)*
  Redesigned the Unix V6 file systems to handle larger files and use different functions like copy, delete, move, and listing files in a directory
- **Advanced computer networking***(Android SDK, java, Amazon Web Services(AWS))*
  Developed an application on Linux, android to synchronize information (files) between laptop, smartphone and cloud.
- **Real-time physics movement: serial comm***(Embedded C, Code composer studio, python, freeRTOS)*
  Implemented i2c communication to read bytes from an external accelerometer into a Cortex M4 dev board using interrupts and controlled objects based on the readings from the accelerometer. The calculated positions were sent to a java application using UART and it was displayed.
  Resolved component compatibility issue and minimized cost in terms of hardware used and increased responsiveness.
- **Advanced Digital Logic***(Verilog, Xilinx FPGA)*
  Implemented MIPS processor using Verilog and simulated various modules such as ALU, memory unit etc. Components like the ALU were successfully tested for different inputs.
  Also implemented a railroad crossing system from state machines.
- **Analysis of Branch Prediction methods** (*Python, NAND flash sim)*
  Compared branch prediction techniques using different simulation benchmarks and analyzed the address hit rates, miss rates and various other parameters by changing the branch target buffer configuration. The cache configurations were checked for performance for different types of compilations like GCC, anagram etc

TECHNICAL SKILLS

- Proficient in Java, Python, C, C++, Shell scripting, Verilog, embedded C, assembly, Android, Matlab, OpenCV, HTML, CSS , Node.js, MongoDB, Angular, Express, React, iOS, Objective-C, swift
- *Tools:* Cadence, Nanosim, Hspice, Virtual photonics.
- *Platforms:* Windows, Linux (Ubuntu), FreeRTOS, Raspberry Pi, Arduino, beagle bone, ARM cortex M4, FPGA