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Summary

A organised, meticulous, and determined software engineering with a focus on building distributed systems.

It has been 10 years since I picked up a book on C programming. Since then I have been led deeper into the world of software development. My discovery of Python was the second biggest turning point. This sparked my interest in Web applications and subsequently Distributed Systems.

After obtaining a Bachelor's degree in Computer Science and Engineering I spent 2 years working at a consultancy. Here I got my first experience of participating in

large projects and the responsibilities that come along with it. After that I moved to a startup where I built web applications and developed an interest in Android development. After working for 2 years in the industry I decided to continue my education in Germany. Studying at TU Dresden in the Systems Engineering chair has given me a unique opportunity to participate in several diverse research projects.

I am also deeply passionate about open-source and I try to contribute to open-source projects whenever I have the opportunity. I always encourage people to use and contribute back to the open-source community.

Experience

Netbramha Studios

Web Developer

Netbramha Studios is a consultancy which develops well designed and content intensive websites for their clients. I was hired right out of college to handle the technical aspects of maintaining these websites as well as minor front-end development. Some projects were built using third-party as well as in-house frameworks. For the front-end development I used jQuery and Dojo and I also did some basic layout and styling with HTML+CSS. As my responsibilities grew I was handed the task of developing a complete web-based front end for one of India's largest pizza delivery chains.

BANGALORE, INDIA

Oct 2010 - May 2011

Locus Labs

Web and Mobile Developer

Locus Labs was at that time a unseeded startup which developed apps for the Singapore market. The target audience were saavy shoppers. The application **Notikum** found offers and bargains for shoppers based on their profile. This involved collecting data from hundreds of websites. I was in the team which scraped the data and indexed it with Solr. I did this while concurrently developing and maintaining the website for this application. The surge in mobile apps necessitated that an Android app be development. I took over the development of this app after some initial work was already done.

After the startup pivoted I was given further responsibilities. I was put in charge of the development of the new product **Notiphi**. Location based advertising was the primary goal of this service. Advertisements were delivered to customers whenever they were in the vicinity of a pre-selected area. I designed and implemented the initial prototype with Tornado and PostgreSQL. I also developed the tools needed for the deployment and monitoring of the cloud-based infrastructure. Using my previous Android experience I developed the Android SDK which could be used by third-party developers to integrate this service into their apps.

BANGALORE, INDIA

Jun 2011 - August 2012

DMFS

Application Developer

DMFS develops data sync applications for the Android platform. I was responsible for the development of the **Tasks** app which uses the CalDav protocol to sync calendar data. This app was subsequently open-sourced and available on [Github](#). I was also part of the team which developed an Android based **Calendar Store** which sold calendars from [Schedjouples](#).

But my primary role was as a Django developer. I developed a web service for the bulk-retail of mobile apps. The service used OpenSSL cryptography to sign and verify the source of the apps. Only apps with a valid key issued from the website could be activated. The Android SDK which integrates with third-party apps to provide this functionality was also developed by me.

DRESDEN, GERMANY

Jan 2013 - March 2014

INQUENCE GmbH

Systems Developer

INQUENCE develops a complete hardware and software solution for office for the the storage and search of the all types of physical and electronic documents. I was responsible for the maintenance

DRESDEN, GERMANY

Mar 2014 - Jul 2014

of the web frontend for this solution, as well as the addition of new features. The software solution consisted of several services which were responsible for converting, indexing and storing the data. I developed a monitoring mechanism using Monit which kept track for all the individual hardware units and monitored for performance changes after software updates.

TU Dresden

Wissenschaftliche Hilfskraft

DRESDEN, GERMANY

Mar 2013 - Present

As a part of the SREX(Secure Remote Execution) project I worked with a team which developed a translator for C programs. The C programs were translated into a subset of C which can be encoded with redundant operations to ensure correct execution even in the event of bit-flips or other random transient errors.

More recently I have been working with distributed coordination services like ZooKeeper and Consul. I have been evaluating the efficacy and characteristics of the respective protocols(ZAB and Raft). One of my duties also includes the implementation of new features to Kazoo, a Python client library for Zookeeper.

Please consult my [LinkedIn Profile](#) for references.

Education

BM Sreenivasaiah College of Engineering, Vivesvararya Technological University BANGALORE, INDIA

Bachelor of Computer Science and Engineering

2006 – 2010

After securing a rank of 446 among more than 200,000 other University entrance examination candidates I was granted a scholarship by the state government. My major was in Computer Science with a focus on Computer Architecture, Web Applications and Discrete Event Simulation. I was also one of editors of the departmental newsletter and also a regular contributor. I also took elective courses in Compiler Design and Discrete Mathematics. For my final year project I developed a Wi-Fi enable robot which could be controlled over the internet. It also had a plethora of sensors which guided in navigation and control.

Technische Universität Dresden

DRESDEN, GERMANY

Master of Science, Distributed Systems Engineering

2012 – 2014

I completed courses in Security and Cryptography, Software Fault Tolerance and Dependable Systems other than the mandatory courses. I also worked in the Systems Engineering Lab and Software Fault Tolerance Lab. Under the guidance of Prof. Dr. Christof Fetzer I am in the process of completing my thesis. I have implemented and evaluated a partitioned Zookeeper service. This is used to increase the throughput of Zookeeper without the negative effects of horizontal scaling.

Projects

JoQuer: Turbo frequency scaling libraries

Modern generation processors like the Intel Haswell series have the ability to temporarily boost the clock frequency by writing to certain registers. A C++ library was developed at the Systems Engineering chair at TU Dresden to provide this functionality to applications and manage them. I was given the responsibility of exposing this functionality through a Java library with a similar API. This was done through JNI(Java Native Interface). After the library was implemented I also replicated the benchmarks and recorded the result to compare the effect of boosting frequency in Java applications.

Studybloxx: Android list sync application (<https://github.com/arjunrn/studybloxx-server>)

For a course in Mobile Application development I developed an application for Android which syncs structured data across devices. The sync is performed with a Django web application through a REST API. This app required the implementation of advanced Android features like the SyncAdapter and ContentProvider. To further improve the application functionality LibGit2 has been cross-compiled to run on Android. This is used to sync the data. Git is used to handle the issues arising out of concurrent modification of data from multiple sources.

WiRover: Wi-Fi enabled robot

WiRover is a rover which can be controlled over the Internet. An Arduino was used to control the servos and read information from the sensors. A Linksys WRT54G router with a serial port added to it is used to receive control commands over WiFi and forward it to the Arduino. A modified Linux based operating system called OpenWRT was installed on the router, replacing the original firmware.

Skills

Technical Specialities: I consider myself language agnostic and I quickly learn and put to use any programming language which is required for the task at hand. However, Python is my favourite and go-to language for most problems. I have used many Python based libraries and frameworks over the course of career. I am very familiar with Django, Scrapy, Google AppEngine, Tornado, Fabric, pyOpenSSL. I have also a good understanding of Frontend web technologies: HTML+CSS, JavaScript(jQuery, Angular.js). I have also some experience with developing web applications using PHP, Ruby and node.js. All my projects are managed through Git or Mercurial. I also have substantial experience developing beautiful native Android applications. Most of my knowledge of Java comes from developing Android applications. Recently I have dabbled in Go and Haskell to solve some concurrency based problems for my courses. I also have some experience using and tuning databases like MySQL, PostgreSQL, MongoDB and Redis. I have also been using Linux both professionally and for personal use. I have a good understanding of the architecture of Linux as well as how to use it effectively.

Natural Languages: English (*Bilingual Proficiency*), Hindi (*Native*), Kannada (*Native*), German (*Limited proficiency*).

Interests

Non-exhaustive and in no particular order: Science-Fiction, photography, hardware hacking, travelling, good coffee