Sunil BN

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Education

University of Colorado Boulder, Boulder, CO. *Aug 2015-Present*
Masters in Computer Science
GPA: 4.0 of 4.0.
Coursework: Machine learning, Data mining, Operating Systems, Object oriented design & analysis, Design & analysis of Algorithms, Network systems, Software engineering.

Bangalore Institute of Technology, Bangalore, IN. *Sept 2007-Jun 2011*
Bachelors in Computer Science & Engineering
GPA: 3.67 of 4.00.

Research Interest

Machine learning, Data mining, Data Analytics, Software development, Image processing.

Skills

C#, .NET, TFS, NUnit, NMock 2.0, WPF, WCF, PRISM, COM, Direct3D, Python, Design Patterns, Clearcase, Linux, C, C++11, GDB, Valgrind, PDB, CLI/C++, MSSQL, MongoDB, Enterprise Architect, NodeJS, AngularJS, Java, Javascript, GIT, GTK+, QT, AutoTools, Perl, MATLAB, R, Apache Spark.

Work Experience

Graduate Research Assistant
University of Colorado, Boulder *Dec 2015 - Present*

- Development of firmware for YPOD(Arduino Yun and chemical sensors) a low cost air quality monitoring system. Supervisor: Prof. Michael Hannigan
- Developing MongoDB backend using AWS for storing the data streamed by Arduino yun over the WiFi module.
- Colloboration and integration of YPOD data with OpenAQ, a real-time database that provides programmatic and historical access to air quality data.

Graduate Teaching Assistant
University of Colorado, Boulder *Aug 2015 - Dec 2015*

- Taught Data structures in C++11 to undergraduates. Under supervision of Prof. Rick Osborne.

Senior Software Engineer
Siemens Healthcare, Bangalore *Jan 2014 - Jul 2015*

- Design, development, Unit testing of software components related to medical imaging software - Syngo.Native(Siemens proprietary software platform for imaging)
- Design and development of display manager for DICOM image rendering using Direct 3D and WPF.
- Prototyping of data management module for Imaging software.

Systems Engineer
Siemens Healthcare, Bangalore *Jul 2011 - Jan 2014*

- Design, development, unit testing and bug fixing of medical Imaging software.
- Exploring and incorporating the new algorithms, strategies to meet the performance(Increase by 5%) and memory(reduced leak of 100 MB/hr) in the product.
- Knowledge management by documenting details of all software components.
- Coordinating and Integrating 3rd party software package into sygno.Interventional product.
- Providing timely trainings and hands on session to the team to keep up with the latest Microsoft technologies (WPF, WCF, PRISM).

Projects

Music recommender system [2016] A personal music recommender system using user preference analysis. I used hybrid model approach which is a combination of collaborative and content based filtering. Apart from recommender system I also build a automatic genre classifier. I used Apache spark(map-reduce) for processing large data-set and Mlib(part of spark) for constructing a model.

pyFFT [2016] The python implementation of Fast Fourier transformations and Discrete Fourier transformations.

YPOD [2016] The YPOD is an embedded-systems platform developed at the University of Colorado at Boulder intended for mobile air quality and environmental monitoring. The configurable design accommodates a variety of sensors, making it a valuable tool for a multitude of applications.

Betrayal in On-line Strategy Game Diplomacy [2015] Detecting when the betrayal is going to happen in a on-line strategy game called Diplomacy. Our approach involves using the game state to capture the game contextual information for modelling a classifier.

Distributed File Server [2015] Client/server based application that allows client to store and retrieve files from multiple servers. Support for simultaneous multiple users, authentication and data encryption using AES.

Web server [2015] Implementation of HTTP web server in C++11. Supports handling of multiple clients, HTTP 1.0 and HTTP 1.1, persistent connection(pipe-lining). Brings up the web server based on the web configuration file.

Key logger [2015] This is a winter break free-time project. The idea is to track the user keystrokes. It's a client server based architecture. Where the client runs in the background without the knowledge of the user, started as a demon at kernel boot time. This client will listen to the keys and send the window name, user id and keystroke to the server.

Screen Recorder [2014] Screen recorder records all screen activity on your computer and create a video file using FFMPEG encoder. It is written in C#. It let's you save the video in the required format (MP4, AVI, MKV etc.).

.NET Memory Profiler [2014] A custom .NET memory profiler application. It automatically logs the memory consumption for the process/processes which has loaded the module(DLL) of interest in Syngo.Via application. This profiler helped in figuring out the memory leaks and Out of memory exception in the project.

Simple OS [2013] A simple Linux like operating system written in C and Assembly using GRUB boot loader.

Voice over GPRS [2010] Voice over GPRS is a Voice chat application for symbian mobile phones. It consisted of 3 subsystems Voice chat, Voice-mail and Virtual classroom.

Honors & Awards

University of Colorado, Boulder Boulder, CO *Aug 2015*
One time university fellowship from the Department of Computer Science.

Siemens Healthcare Bangalore, IN *Jan 2014*
Award for efforts in identifying the bottlenecks that lead to stability issues in the project.

Siemens Heatlhcare Bangalore, IN *Jan 2013*
Spot award for extraordinary efforts towards delivery of project

Bangalore Institute of technology Bangalore, IN *Jan 2008*
Received scholarship for 3 years from HoneyWell.

High school Bangalore, IN *2004*
Scholarship from Prerana Infosys foundation.