ARITRA SAMANTA

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OBJECTIVE

To harness challenging and impactful skills in the field of **Systems Software** and **Computer Architecture** and apply them to make substantial contribution to business growth as an innovator and a leader.

EDUCATION

Purdue University

Bachelor of Science in Computer Science	2012 – 2016
Bachelor of Science in Electrical and Computer Engineering (Minor)	2012 – 2016

SOFTWARE & HARDWARE SKILLS

- C, C++, Python, Java, Bash, MATLAB, OpenGL
- Systems Programming: lex, yacc etc., Operating Systems(Xinu – MIPS)
- VHDL, Verilog, Hardware Design Logic (RTL) etc.
- Assembly Language Programming (x86, ARM)
- JavaScript, HTML, CSS, PHP, MySQL, JSON, AJAX, Bootstrap, Android

PROJECT WORK

IoT Research Project

- Research Project that includes construction of a low power smart grid that includes implementation of **IPv6** and **TCP** stack on small sensors.

ASIC based GPU

- **ASIC** design of a simple **GPU** comprising of several individual **controlling units** capable of performing computation-intensive graphical **image** processing in a fairly efficient manner using **System Verilog, ModelSim, Cadence Encounter**

Hand Gesture Controlled Media Player

- Designed and put together a **media player** that interpreted instructions via **hardware peripherals** such as **RF transmitters and receivers, accelerometers and flex sensors**, interfaced with a **9S12C Microcontroller** and a **Raspberry Pi**. I lead a team of four as a **Software leader** to perform all necessary software and hardware interfacing, testing etc.

Shell Project

- Built a **command line interpreter** that mocks the **UNIX** terminal and provides similar functionality and uses the **lex** and **yacc** for interpretation and **C/C++** for the command processing using system functions.

Web Server

- Used **C** to build a web server that processes requests and has different stages of **client-server** communication implemented wherein each stage utilizes concepts such as **multithreading** and **multiprocessing** using **POSIX** threads and **forking** concepts.

Web Crawler

- Used **C++** to implement a **Search Engine** that takes in a text request and searches for it in a large database using various dictionary Data Structures such as **Hash Tables, AVL trees, Heaps** etc.

WORK EXPERIENCE

Dolby Laboratories Inc. - Software Engineering Intern June 2015 – August 2015

- Studied the original **Audio pipeline** and implemented a **native plugin** for the **Unity Game Engine** that will override existing Audio Pipeline and route it through other libraries for **surround sound experience** on **Stereo** output for **Linear Virtual Reality applications**.
- Used C/C++, C# and Xcode

Atria Logic Inc. -Software Engineering Intern May 2015 – June 2015

- Implemented a **communication system** between a **microcontroller (Cypress PSoC 4 BLE)** and a **prototyping board (XILINX ZYBO 7010)** using **Bluetooth 4.0** that will control a **media player** running on the prototyping board.
- Used C and Embedded C.

Purdue Horticultural Dept. - Application Software Developer and Manager May 2014 – April 2015

- Developed websites to process large amounts of data, perform optimized database management routines such as efficient **searches**, **updates** etc., and worked on **dynamic UI** and user-interactivity to improve scope of the tools.
- Used Bootstrap, JavaScript, AJAX, JSON

ResNet, Purdue University - Senior Software and Web Developer – ResNet 2012 – 2014

- Designed and developed a **web-tool** to manage and monitor resources and data pertinent to **University network usage** etc.
- Used PHP, MySQL frameworks and JavaScript, HTML, CSS front-end code base.

S.A.R.A.S - Android Application Developer – Intern Summer 2013

- Devised a learning mechanism and tool to train students to be a part of several ongoing projects. Utilized **Android studio** to develop an **interactive mobile application** to facilitate effective learning.