

Madushan Nishantha

Curriculum Vitae

Contact Info

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About Me

I'm a technology enthusiasts who always seeks for new and interesting technological advancements in Computer Science and Engineering which lets me to get in touch with new technologies as soon as they are available.

I love working with teams of other people and I can always adapt to the surrounding environment at ease.

My career goal is to work in the embedded systems development sector or Operating Systems research sector which I think will take the best out of me even though I also have experiences in Mobile and Computer software development.

Education

2011–Now **Bachelor of Engineering (B.Sc.)**, *University of Peradeniya*.
Computer Engineering, Undergraduate
2002–2010 **Graduate School**, *Sivali Central Collage*, Ratnapura.
Specialized in Science (Mathematics)

Awards

2011 Winner(Robotics – Mindstrom) – Innovators
Faculty of Engineering – University of Peradeniya
2013 1st runner up – ACES Hackathon
Faculty of Engineering – University of Peradeniya
2010 Bronze Medal – Sri Lankan Physics Olympiad

"Samanpaya", Hangamuwa – Ratnapura

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Technical skills

- Advanced GNU/Linux, Microsoft Windows, Android, FirefoxOS
Network Programming (wsgi, C)
Version Control Systems (git, cvs, svn, Mercurial)
Content Management Systems (Wordpress, Drupal, Joomla)
Cloud infrastructures (OpenShift PAAS, IBM SmartCloud, Google AppEngine)
NetBeans, Eclipse, Code::Blocks, Microsoft Visual Studio
- Intermediate Raspberry Pi, Arduino, FPGA
FreeBSD, Ubuntu Touch, Jolla Sailfish
L^AT_EX, OpenOffice, MsOffice

Programming skills

- Advanced C/C++, JavaSE, JavaME, C#.NET, Python, MATLAB, VHDL, Shell, HTML
- Intermediate Haskell, PHP, Node.js, JavaScript, Action Script, BASIC, HTML5, CSS, MySQL, Perl, Ruby, awk, BrainF, ARM assembly, MIPS assembly, x86 assembly

Languages

Sinhala **Mothertongue**

Creative Writing

English **Intermediate**

Con conversationally fluent

Interests

- Operating Systems
- Virtualization
- Hiking
- Reading
- Embedded Designing
- Quantum Computing
- Exploration
- Creative Writing

Projects

Seven Segment Display Decoder for hexadecimal numbers – FPGA

Designing and implementing a decoder for displaying hexadecimal numbers in seven segment displays using modelsim Altera suit, VHDL and Altera DE2 development board with Cyclone – II FPGA.

4bit ALU – FPGA

Designing and implementing a 4bit ALU from scratch using modelsim/VHDL and test it using modelsim simulations and the Altera DE2 development board.

Projects

Android Custom Rom

Building an Android Custom Rom (Custom Android version) for HTC Desire HD mobile phone directly from AOSP (Android Open Source Project).

The process of porting a new version of Android (4.2.2 JellyBean in this case) to a legacy hardware platform consist of several steps like picking the right source trees from various git and some other kinds of source repositories, picking the right Linux drivers (kernel modules) from the hardware venders, initialize and configure the local android build system with the sources and drivers chosen above according to device specification, downloading the sources using android build system, building android from source, debugging the build on real hardware, fixing the bugs and rebuild until a usable stability is reached.

The process of building Android itself gives a great deal of understanding about Android build system, version control systems like git, Linux internals and the hardware platform.

Porting FirefoxOS (B2G) to a new hardware platform

Porting FirefoxOS, otherwise known as Boot to Gecko (B2G) to HTC Desire HD hardware includes most of the android porting steps and additionally includes the process of building customized gecko version optimized mobile phones and touch screens on top of the Android sources. Then a custom kernel optimized for FirefoxOS should be built and the build should be debugged on real hardware until a usable stability is reached.

User level thread library – C

Designing and implementing of context switching library for user level C programmes which requires the basic knowledge about synchronization, process scheduling algorithms, x86 hardware architecture assembly and C calling conventions for x86.

Virtual Memory Management System – OS161

Designing and implementing a Virtual Memory Management System for educational operating system OS161 requires the knowledge about basic virtual memory concepts like paging, page tables, swapping and also the knowledge about synchronization primitives and basic hardware knowledge about how the physical memory (RAM, ROM) works.

This also gives the confidence to work with large code bases (over 8000 loc) and lot of understanding about low level C coding and UNIX internals.

Contributing to Firefox for Android – fenek

Fixing the bug ID 948896 on Mozilla Bugzilla which finally committed to the mozilla-central source tree as rev 2cc946bb55c4

Car park management system – Java

Car park management system which lets the user to mange a car park with full fledged GUI which uses MySQL as the database system.

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Projects

OCR based chemical reaction solver – Android

An android mobile application which uses Google's tesseract OCR engine to identify a chemical reaction printed on a paper and return the result.

HTML Tag Cloud Generator – C

UNIX based HTML Tag Cloud generator which takes advantage of UNIX multiprocessing architecture and syscalls to speed up the processing of a large number of HTML files concurrently.

Automated Timetable – Android

Automated android timetable which synchronize across multiple people and devices with the help of the Google calender API and PhoneGap to keep in track with academic timetable changes and updates, notices, etc...

Online Fashion Store – PHP, MySQL

Online Fashion which a user can order fashion items with a administration panel for administrative staff based on PHP and MySQL as the database backend.

Singlish for Mobile – JavaME

Singlish text to Unicode Sinhala text converter for low end JavaME compatible mobile phones.

Referees

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