Anusha Dharmasena

Software Engineer

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Address:	Oakleigh East, VIC 3166
Resident status:	Permanent

SKILLS

Software Engineering | Programming in C, C++, C#, JavaScript | ReactJS/NodeJS web apps | Agile Scrum | Software Version Control (Git, Perforce, SVN) | Japanese Language

PROFESSIONAL EXPERIENCE

Square One Laboratories Pty Ltd., Melbourne (website) – *Embedded Software Engineer/ReactJS developer*

FEBRUARY 2016 - TODATE

(Exposure: React.js, Weboack, JavaScript, CSS, Restful API design, Semantic UI, Node, Express, Free Pascal, Lazarus IDE, SQLite, Git)

- Currently developing a **React.js/Reflux.js web UI** for an upcoming smart controller used in irrigation systems to design, control and monitor systems over the internet/network.
    - Learned React.js from the scratch by reading the Fullstack React book and taking online courses on Udemy to design the UI. (ongoing…)
    - Designed the *Dashboard* component to display the current sensor readings, system alarms and event history (charts) in the prototype.
    - Expanded the System Designer module in the prototype to save the user created Systems (XML data) to the Node.js server and retrieve them as a list to edit/view them.
    - Currently designing components to control the irrigation of the systems and configuring schedules.
    - Designed a RESTful API for interfacing with the backend and built an Express server for development.
    - Added routing to the application using React Router.
    - Styled the UI using Semantic-UI/JQuery and some custom CSS. (Planning to switch to Semantic-UI-React to eliminate JQuery)
    - Migrated old components to the new ES6 class syntax.
- Designed the **Sensor Log Visualiser** application using Free Pascal to visualise the sensor and event log data from current irrigation controllers (version 1.0 released recently), which was previously done manually using Excel.
    - Multiple sites are already using the application which gives the technicians a super convenient way to detect any issues in the system.
- Designed the **Lead Time Calculator** application using Free Pascal to estimate the lead-times of hundreds of components used in the company's electronic products. (internal use only).

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Metatechno Inc., Japan (website) – *Systems Engineer*

APRIL 2012 - DECEMBER 2015

(Exposure: C, C++, C#, Agile Scrum, Jenkins, Version control with Perforce, Visual Studio, Multithreading, Hotspot analysis, Debugging)

- Transformed the Canon **Windows V4 printer driver** to be able to replace the aging V3 driver.
    - Ported features from the V3 driver including polygon fill-path optimisation, half-toning with 10-bit dither & error diffusion and reduce toner wastage.
    - Achieved an end result of output quality being identical to that of the V3 driver in 94% of the test data; and performance exceeding the V3 driver in 61% of the times.
    - Analysed potential issues caused by eliminating the intermediate rasterization process to improve performance; prototyped alpha simulation to resolve them.
    - Wrote Ruby scripts to be executed by the Jenkins server to automate tests.
    - Analysed the differences between the output of the V3 drivers and the V4 driver reported by the QA team and collaborated with the Form Manager team to resolve them.
    - Contributed to the internal Wiki by explaining complicated code ported to the V4 driver.
    - Mentored a young engineer about efficient programming and common coding practices.
- Designed an **SVG converter** for the *Canon corporate cloud printing service* to view PDF files that were stored on a remote server quickly & efficiently on iOS and Android devices.
    - Created a detailed document on the PDF to SVG conversion specification.
    - Designed and implemented all the command conversion modules (Images, Tiles, Masks, Fill Paths and Stroke Paths) except the font conversion module.
    - Experimented with various SVG layouts to pick the fastest rendering layout.
    - Achieved an end result of the generated SVG files rendering faster than the PDF files in 77% of the test cases, with more than 93% of them matching render PDF outputs.
- Fixed quality degradation issues caused by excessive optimisation in the load balancing module of the XPS driver.
- Designed an application to automate testing of the XPS and V4 drivers.
- Designed a tool to analyse and filter images uploaded to Canon PhotoPresso service which resulted in colour degradation of the brighter areas of the photos.
- Refactored more than 7500 lines of source code of the module which generates drawing commands for the printer in the V4 driver.
    - Carried it out autonomously and concluded it in 60% the time that was allocated for it.
    - Regression tests and the review team were unable to discover bugs in the new code.
- Debugged memory-related errors in the Font Engine of the next generation Inkjet printers.

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Metatechno Inc., Japan – *Software Engineer*

MAY 2010 - MARCH 2012

(Exposure: C, C++, VS2005/2008, Subversion, Object Oriented Design, Optimisation, MFC, WDK PREfast, VTune)

- Ported newer features and class structure of the rendering module in the *Canon corporate cloud printing service* to the XPS driver in order to move into the development of the V4 driver.
- Expanded the Test Harness to support half-tone printing, edge smoothing and toner aligning.
- Analysed bottlenecks in the XPS renderer using Intel VTune & command dumps; overcame them by omitting transmission of redundant commands.
- Designed a prototype to resolve a printing error due to insufficient memory, when poster-sized documents were printed from the Canon PosterArtist application, by compressing large image commands received by the driver.
- Performed PREfast checks and fixed the reported warnings before each release.

Metatechno Lanka Company (Private) Ltd, Sri Lanka (website)- *Software Engineer*

MAY 2008 - MAY 2010

(Exposure: HTML, CSS, PHP, JavaScript, AJAX, SQL)

- Developed web applications for internal use, including a Management Information System using PHP, JavaScript and SQL.
- Tested behaviour of the web applications by writing test cases and running each test case.
    - These test cases caught numerous data input bugs that had escaped testing in the pre-alpha stages.
- Studied Japanese to communicate effectively after being transferred to the mother company, Metatechno Inc, in Japan.

PERSONAL PROJECTS

- Personal website project (link)
    - Started this recently to learn and experiment with web technologies and to make it a portfolio. Source code is maintained on GitHub and hosted on GitHub Pages.
- Blog (link)
- React projects for learning and experimenting with, which are maintained on GitHub
    - DashboardForController (link)
    - BitrateCalc-React (link)
    - FavMovies (link)

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HOBBIES

- Playing First Person Shooters on the PC (Crysis 3 is my favourite)
- Learning about Web Development and UX by taking courses one Udemy. Some of the top-rated courses I am currently following are:
    - Modern React with Redux (link)
    - Advanced React and Redux (link)
    - JavaScript: Understanding the Weird Parts (link)
    - Learn and Understand NodeJS (link)
    - Git a Web Developer Job: Mastering the Modern Workflow (link)
- Following latest news related to PC hardware on technology website, forums and YouTube tech channels.
- Blogging about day-to-day technology related thoughts and experiences.

EDUCATION

University of Colombo - School of Computing, Sri Lanka - *Bachelor of IT*

JANUARY 2006 - DECEMBER 2009 (Effective from 1 JANUARY 2010)

University of Moratuwa, Sri Lanka - *Bachelor of Science (Honours Degree in Electronic & Telecommunication Engineering)*

APRIL 2004 - FEBRUARY 2008 (Effective from 1 JULY 2008)

OTHERS

- Represented Sri Lanka in the 44th International Mathematics Olympiad (2003 Tokyo).
- Attended an Agile Scrum training programme at Val Research Institute, Japan.