John Rizkalla

phone number	email | email Address	GitHub | Projects | LinkedIn

Profile

Persistent and motivated problem solver with high aptitude for researching and learning new programming languages and concepts.

Technical Skills

Low level programming and assembly:	C, MIPS, ARM
Object-oriented programming:	C++, Java, Objective-C, Swift
Functional programming:	Scheme
Concurrency:	μC++, Java concurrency, Go
Scripting languages:	Javascript (and Node.js), Bash, Make, php, Python
Databases:	MySQL, PostgreSQL, MongoDB
Typesetting and markup:	TeX, LaTeX, and BibTeX, HTML, CSS, Javadoc and Doxygen
Libraries and frameworks:	jQuery, Bootstrap, Ajax, AngularJS, Core Audio, Core Graphics
Operating systems:	The *nix systems including Mac OS and Linux, Windows
Other:	Vimscript, regular expressions

Qualifications

> Proficiency in algorithms and knowledge of basic and complex data structures

> Understanding of the foundations of operating systems

> Familiarity with compilers and formal languages

> Knowledge of many design patterns and programming paradigms

> Solid mathematical foundation including formal proof of correctness and asymptotic notation

> Practical knowledge of building embedded systems on ARM and MIPS architectures

> Experience with version control (Git) and most common code sharing platforms (GitHub, GitLab, Bitbucket)

> Emphasis on good coding structure and thorough documentation

Education

Joint Honours Computer Science and Psychology at the University of Waterloo 2013 – present

> Currently in fourth year (4A) with expected graduation date in 2017

> Named to the Dean's Honours List for the Winter 2015 term (2B) and Fall 2015 term (3B)

> Finished 1B, 2A, and 3A with excellent standing and 1A with good standing

CS 240	Data Structures and Data Management	91%	CS 350	Operating Systems	92%
CS 241	Foundations of Sequential Programming	89%	CS 343	Concurrent and Parallel Programming	86%
CS 251	Computer Organization and Design	90%	CS 452	Real-time Programming	TBA
CS 341	Algorithms	90%	CS 456	Computer Networks	TBA
CS 348	Introduction to Database Management	81%	CS 458	Computer Security and Privacy	TBA

Projects

Building a Micro-kernel for ARM   2016 – present

> Working on a micro-kernel from scratch for an ARM processor with a partner (for CS 452)
> The micro-kernel will be used to implement a model train controller

UW Google Soli   2015 – present

> Member of the University of Waterloo team working on Google's Soli
> Work alongside UW professors, computer science, and engineering students on applications of Soli

Minesweeper   2015 – present

> Implemented a GUI using Java Standard Widget Toolkit (SWT) for the minesweeper game
> Implemented a solver. The solver will be used to generate only solvable games
> Implemented a way to insert themes dynamically using polymorphism and Java dynamic class loading
> Documented the code extensively using Javadoc

Enigma Emulator   July, 2015 – August, 2015

> Implemented a World War II Enigma Machine emulator with a command line interface
> Designed the code to be easily extended to add any arbitrary code in the encryption/decryption process
> Implemented a finite state machine to parse the settings of the Enigma Machine
> Meticulously documented code using Javadoc and created a website detailing my code

WLP4 Compiler   January, 2015 – April, 2015

> Implemented a compiler for a simple language to MIPS assembly as part of the assignments for CS 241
> Added extra error checking code to the compiler at different stages of the compilation process
> Programmed additional optimizations such as register allocation

Building Buyer 7000   September, 2014 – December, 2014

> Coded a command line Monopoly-like game with a partner for CS 246 using C++
> Documented code using Doxygen and implemented a artificial intelligence with different difficulty levels to play the game

Cocoa Core Libraries   2013–2014

> Taught myself Core Audio and implemented several small projects for OS X and iOS
> Experimented with Core Graphics in the context of iOS applications

Links

Linked In: `https://ca.linkedin.com/in/john-rizkalla-6b7030a5`
GitHub: `http://github.com/jrizkalla`
Projects: `http://jrizkalla.github.io`