Ju Hong Kim

linkedin.com/in/ju-hong-kim-zaku | zakuarbor.github.io/blog/
github.com/zakuArbor

EDUCATION

Carleton University September 2021 - Present
HBSc in Mathematics

University of Toronto Mississauga September 2015 - June 2020
HBSc in Computer Science with Distinction, Overall CGPA: 3.35/4

West Carleton Secondary School September 2011 - June 2015
Highschool Diploma, Ontario Scholar

EXPERIENCE

Carleton University - Linear Algebra Teaching and Learning Assistant October 2022 - Present
- Develop full solutions to sample problems on PowerPoint for future video recording to increase student success

Carleton University - Calculus and Linear Algebra Teaching Assistant September 2022 - December
- Guide a class of 47 engineering students on how to solve and approach problems in Calculus
- Strengthen Math students in their analytical and mathematical intuition to tackle proofs in Linear Algebra

Blackberry QNX - Student Support Developer January 2022 - April 2022
- Advised clients on their technical problems from debugging to design relating to QNX, POSIX C, and Momentics IDE to enable customers to remove blockers in their development cycle
- Technical issues ranged from compilation, API/utility usage, networking, and debugging crashes
- **Languages, Tools, and Environment:** C, SVN, Git, GDB, QNX, and Momentics

IBM Canada - Db2 Build Infrastructure DevOps Developer July 2020 - August 2021
- Increased productivity of developers by developing, debugging and improving build infrastructure and automation tools to better facilitate the development pipeline
- Mentored interns and junior employees on their work and programming knowledge to further their career and performance
- **Languages, Tools, and Environment:** Perl, Node.js, Python, C, Linux/UNIX, Git, Clearcase, and Jenkins

IBM Canada - Db2 Build Infrastructure Intern May 2018 - August 2019
- Monitored Unix and Linux nightly and special builds for Db2 to ensure builds are released regularly
- Improved build infrastructure and automation tools to ensure developers have the latest stable code to improve on
- Supervised in the migration of a server to remove blockers and ensure migration was completed with minimal downtime
- **Languages, Tools, and Environment:** Perl, C, PHP, Clearcase, Linux/UNIX, Jenkins, and Buildforge

Ericsson - Student Assistance to the Standards Advisor February 2015 - June 2015
- Assisted in configuration and planned migration of a server
- Maintained and debugged servers and programs to ensure services were available with minimal downtime

TEACHING AND LEARNING ASSISTANT EXPERIENCE

Carleton University
- MATH 1152: Introductory Algebra 1 October 2022 - December 2022
- Linear Algebra II Learning Assistant October 2022 - Present
- MATH 1004: Calculus for Engineering or Physics September 2022 - December 2022

PROJECTS

- Led a team of students to design a passwordless continuous desktop authentication by using a smartphone as a Bluetooth authenticator to replace password-based authentication for convenience
  - Lead developer on the authentication module to continuously authenticate the smartphone via Bluetooth
  - Aided in the development of the Android app to communicate with the desktop via Bluetooth
  - **Technologies and Languages:** C, Kotlin, Linux Bluetooth Library Stack (Bluez), Linux PAM, and D-Bus
- Implemented a progress report card generator as a potential product for a school to be mobile-friendly and intuitive
  - **Technologies and Languages:** PHP, HTML, CSS, and Javascript
- Web-scrapped course data using Python and processed data using Perl to analyze student enrollment and instructor history to generate JSON data for a web data visualization side project
  - **Technologies and Languages:** Perl, Python, React
- Implemented an assembler, written in C, for a 16-bit architecture to convert Hack assembly to machine code
- Collaborated on a front-end prototype of an existing chemical research patent web app to improve UX by making the UI intuitive and allow users to accomplish their tasks with a minimal amount of actions

- **Technologies and Languages:** React, Node.js, and SQL

SKILLS

- **Systems Programming**: C with exposure to C++ and Rust
- **Web Design**: HTML, CSS, Javascript, PHP, JQuery, React and NodeJS
- **Database:** SQL and NoSQL (MongoDB and Firebase)
- **Scripting Languages:** Perl, Bash, and Regex
- **Other Programming Languages:** Python and Java
- **Version Control:** Git and Clearcase
- **OS:** Linux, UNIX, and QNX

PRESENTATIONS AND PAPERS

Capstone Papers

- ProxyAuth: A continuous authentication scheme for a Linux GNOME Desktop Environment using a Mobile Device with Bluetooth Connection
  - https://github.com/zakuArbor/proxyAuth/raw/master/kim_proxyauth_paper.pdf

Unofficial, Informal and Non-Academic:

- Blackberry - "An Introduction to Adaptive Partitioning Scheduler and How to Bankrupt Partitions" April 2022
  - Blog Version: `https://zakuarbor.github.io/blog/qnx-aps/`
- IBM - "What Happens When You Press the Play Button - The Compiler Toolchain" May 2021
  - Blog + Presentation Slides: `https://zakuarbor.github.io/blog/building-code-presentation/`
- IBM - "What does the Build Team Do - An Overview of Builds and DevOps" May 2021
  - Blog Version: `https://zakuarbor.github.io/blog/build-team/`

BLOG (Samples)

Topics: Programming, Math, and School

- Deriving Double Angles through Matrix Rotations June 2022
- Rust - Exploring the Assembly Code between Mutable and Shadow Variables May 2022
- QNX - An Introduction to Adaptive Partitioning Scheduler and How to Bankrupt Partitions April 2022
- C Programming - Variable Length Array (VLA) June 2021
- What is Name Mangling July 2021
- Error Loading Shared Library Even If File Exists May 2021
- What Goes On When You Press the Play Button- The Compiler Toolchain April 2021
- Bias UTM CS Course Review July 2020

Course Reviews (Samples)

Topics: Programming, Math, and School

- MATH2107 - Linear Algebra 2
- MATH2052 - Calculus and Introductory Analysis II
- PHYS1004 - A Review on Introductory Electromagnetism and Wave Motion
- Bias UTM CS Course Review July 2020
  - Over 3000 students, parents, TAs, and professors have read the post[1]

VIDEOS

- Deriving Double Angles through Matrix Rotations
  - `https://studio.youtube.com/video/hRs0t8G0ef0/edit`
  - **Tools:** Python and Manim
- Pokemon Yellow and Silver Walkthrough (Gameboy Color)
  - Over 243,100 views with over 80 comments [2]

SOCIAL MEDIA

Github: `https://github.com/zakuArbor`
LinkedIn: `http://www.linkedin.com/in/ju-hong-kim-zaku`
Blog: `https://zakuarbor.github.io/blog`
Youtube: `https://www.youtube.com/user/nabimoon1234/` **Instagram:** `https://www.instagram.com/misthermit/`
GoodReads: `https://www.goodreads.com/user/show/94594273-ju-hong-kim`

[1] As of December 11 2022: 3244 views on Wordpress and 71 clicks to Github Page mirror according to Google Search Console
[2] Source Date: December 11 2022

CERTIFICATES

- Coursera - Build a Modern Computer from First Principles: From Nand to Tetris (Project-Centered Course)
- IBM - Cloud Core
- Coursera - IoT (Internet of Things) Wireless & Cloud Computing Emerging Technologies

VOLUNTEER

- UTM Community Event with Evergreen - Tree Planter — September 2015
- Tim Hortons Dragon Boat Festival - Site Cleaner — July 2012
- Ottawa Korean Community Church Summer Camp - Volunteer — July 2010

HOBBIES

- Reading Light Novels and Manga
- Plastic Models (Gunpla)
- Computer Programming