# Muhammad Hasim

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### A Summary

Hi, I am Muhammad Hasim, an aspiring software engineer with a solid foundation in low-level programming, algorithms, higher-level programming, system engineering, and DevOps. I was enrolled in ALX SE Bootcamp, where I have gained hands-on experience in various technical projects. Passionate about solving complex problems, learning new technologies, and contributing to innovative projects with keen interest in AI/machine learning, and backed engineering and technology in general.

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# Education

- **ALX SE Bootcamp**

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# Work Experience

- ## FutureCom [2018 - 2020]: This role had me work as an onsite and offsite network engineer where i handled incoming networking traffic, troubleshooted and installed radios where needed

# Technical Skills

- **Programming Languages:** C, Python, JavaScript, SQL
- **Web Development:** HTML, CSS, JavaScript, Flask, Nginx, HAProxy
- **Database Management:** MySQL, MongoDB Atlas
- **DevOps:** Shell Scripting, Git, CI/CD, Configuration Management (Puppet), Networking
- **Tools & Technologies:** Emacs, vi, GitHub

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# Projects

### AirBnB Clone
- Developed a clone of the AirBnB website.
- Implemented the backend using Python and Flask.
- Set up a MySQL database for data storage.
- Configured Nginx web server and HAProxy load balancer for deployment.

### printf from Scratch
- Implemented the printf function in C from scratch.
- Gained deep understanding of variadic functions, string manipulation, and formatted output.

### Shell from Scratch
- Created a simple shell in C.
- Implemented command parsing, execution, and built-in functions.

### Racket
A portfolio project where I aimed to solve my problem of not having good books to read by using LLM. I was able to get recommendations based on what I wanted to read in a book or what a book was about.
Technology used:
- Node Js / Express
- Google Gemeni (LLM)
- Book Cover API
- Atlas MongoDB (Cloud DB)
- HTML and CSS

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# My Exposure including the following:

**Low-level Programming & Algorithm**
-  **Projects:** C - Hello, World, Variables, if, else, while, Functions, nested loops, Debugging, Pointers, arrays and strings, Recursion, Static libraries, malloc, free, Preprocessor, Structures, typedef, Function pointers, Variadic functions, printf from scratch, Shell from scratch.

- **Data Structures & Algorithms:** Singly linked lists, Doubly linked lists, Stacks, Queues, Hash tables, Sorting algorithms, Binary trees, Search Algorithms.

- **System Programming:**  File I/O, Simple Shell.

# Higher-level Programming
- **Python:** Hello, World, if/else, loops, functions, import & modules, Data Structures (Lists, Tuples, Set, Dictionary), Exceptions, Classes and Objects, Test-driven development, Inheritance, Input/Output, Object-relational mapping, Network.

- **JavaScript:** Warm up, Objects, Scopes and Closures.

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# System Engineering & DevOps
- **Bash:** Shell basics, permissions, I/O Redirections and filters, init files, variables and expansions, Loops, conditions and parsing, Processes and signals.
- **Scripting:** Regular expressions.
- **Networking:** Basics #0 and #1.
- **Web Stack:** Web infrastructure design, Web server (Nginx), Load balancer (HAProxy), HTTPS SSL, MySQL.
- **Security:** SSH, Firewall.
- **CI/CD:** Configuration management (Puppet).

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