

Mohammed Al-Jawaheri

mobj@cmu.edu | linkedin.com/in/mohammed-al-jawaheri | github.com/M-aljawaheri

EDUCATION

Carnegie Mellon University

B.S. in Computer Science, Concentration in Computer systems

May 2023

Relevant Coursework:

15-410 - Operating Systems Design & Implementation

15-411 - Compiler Design & Implementation

15-440 - Distributed Systems

15-441 - Computer Networks

15-445 - Database Systems

GPA: 3.93/4.00

Dean's List (8/8 semesters)

WORK EXPERIENCE

Backend Engineer

Sep 2023 - Present

Hungry Mushrooms Game studio

- Architected a backend migration for three games from previous backends/adhoc firebase storage
- Overlooking live migration of player nosql data to cockroachdb

Teaching Assistant

Aug 2023 - Present

Carnegie Mellon University

- Graded and created exams for undergraduate courses on Computer systems, Operating systems and Algorithms

Undergraduate Research Assistant

May 2021 - Sep 2021

Carnegie Mellon University

- Contributed to research software for Teams of aquatic robots for marine environmental monitoring
- Simulated robot squad communication in both 4G/Wifi in NS3 before deployment

PROJECTS AND ACHIEVEMENTS

HyperOS: OS & hypervisor | C/x86

Aug 2022 - Jan 2023

- Built a fully pre-emptive multi-tasking kernel on real x86 hardware
- Supported Paravirtualization interface for running guest kernels
- Implemented user-space multi-threading, and user-space hardware exception handling
- Packaged with custom made user-space thread library and synchronization primitives

C0++: Type inferring optimizing compiler | C++17, Flex/Bison

Aug 2021 - Jan 2022

- Built a compiler for a C-like language targeting x86-64
- Implemented optimizations such as partial redundancy elim. and str. reductions
- SSA-based, competitive with GCC -O1 on many benchmarks

FileStack: Distributed Filesystem | Java

Jan 2022 - May 2022

- Developed a Java RMI library and used it to implement a FS inspired by HDFS and GFS
- Implemented locking and a basic invalidation-based replication mechanism

Connect4 | Javascript (Matter.js), Python (django)

Mar 2021 - May 2021

- Real-time online turn based connect-4, physics simulated pieces
- Django 3.x backend, Django channels for websockets

HONORS AND AWARDS

Andrew Carnegie Society Scholar Recognition by CMU to 40 exemplary students

Qatar Campus Scholar Recognition given by CMU-Q given to one graduate of each major

Best Freshman Team prize at CarnegieApps Hackathon 2020

TECHNICAL SKILLS

Languages: C/C++17, x86/x86-64 Assembly, ARM Assembly, Java, Javascript, Python, SML.

Developer Tools: Git, Docker, Simics, GDB, CMake