Shafin Ahmed

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Education

McGill University *Montreal, Quebec*

B.Sc. in Computer Science *Sept. 2017 - Exp. Dec. 2020*

- **Relevant Courses:** Algorithms & Data Structures, Software Design, Software Engineering Project, Programming Languages and Paradigms, Fundamentals of Comp. Graphics, Intro Robots & Intelligent Systems

Skills

Languages Java, Python, C, C#, OCaml, SQL

Technologies Git/GitHub, Bash, Linux/Unix, Unity, Matplotlib, BeautifulSoup

Projects

Flashpoint: Fire Rescue *School*

C#, Unity

- Group project implementing a client/server online multiplayer version of the Flashpoint: Fire Rescue board-game.
- Used Unity's Multiplayer High Level API to set up the main lobby where players can join or create servers.
- Designed and implemented many of the core game algorithms and logic seen in the official rules.
- Designed and wrote the entire chat interface so players can communicate with each other while playing.
- Made sure all data was properly sent from host to clients and vice versa as necessary.

GoLite Compiler *School*

OCaml

- Designed a compiler for GoLite, a significant subset of Go, in OCaml using Menhir and Ocamllex in a group of 3.
- Supports all the phases of a compiler including parsing, type checking and equivalent code generation in Java.
- Designed the symbol table for type checking as a cactus stack of hash tables with parent pointers for each scope.
- Implemented support for GoLite statements (if statements, loops, switches, etc.) in all the phases of the compiler.

Lost With Robot *Global Game Jam*

C#, Unity

- Worked with a team of 7 to design, develop and prototype a 2d local cooperative puzzle game.
- Developed movement mechanics and made sure it worked with both keyboards and controllers.
- Implemented lighting and flashlight effects that followed the player's movement.
- Used Unity's animation tools to add animations to characters when walking or using a skill.
- Currently further polishing and developing project into a more releasable state.

FrameMaker *Personal*

Python

- Python script that extracts unique image frames from a video file.
- Uses OpenCV and SSIM for image extraction and comparisons.
- Designed the script to get lecture slides from university lecture recordings where slides were not given.

McGill Course Visualizer *Personal*

Python

- Designed a script to display a visualization of how all courses at a given program at McGill University are related.
- Used the BeautifulSoup library to parse through all relevant courses and their prerequisites from McGill's course webpages.
- Used the Graphviz library to build up a graph containing all the courses as nodes and prerequisites as edges and displayed it.