Malek Anabtawi

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TECHNICAL

Languages: C, C++, C#, Python, Javascript, Ocaml

Technologies: Unity, Docker, Postgres, HoloLens, Azure DevOps

Frameworks: React, FastAPI, Flask

PUBLICATIONS

An Oracle Hierarchy for Small One-Way Finite Automata (LATA, 2019)

Preliminary Design and Evaluation of A Remote Telementoring System for Minimally Invasive Surgery (Surgical Endoscopy, 2022)

Evaluation of User-Interfaces for Controlling Movements of Virtual Minimally Invasive Surgical Instruments (Int J Med Robot, 2022)

Assessing Virtual Reality Environment For Remote Telementoring During Open Surgeries (IEEE BIBE, 2022)

Benchmarking Network Performance of Augmented Reality based Surgical Telementoring Systems (IEEE BIBE, 2022)

A Holographic Telementoring System Depicting Surgical Instrument Movements for Real-time Guidance in Open Surgeries (CMPB, 2024)

EVENTS & CONTESTS

Participant: GameQode 2020

Participant: Global Game Jam 2020

Participant: Ludum Dare 45

Writer: BioSci Play 2018 & 2017

First Place: Hack Games 2017

EDUCATION

Graduated December 2019
Carnegie Mellon University
MS in Computer Science

Graduated Spring 2018
Carnegie Mellon University
BS in Computer Science – University Honors
Minor in Mathematical Sciences

EXPERIENCE

AUGUST 2023 – PRESENT
Qatar Computing Research Institute: Software Engineer | JS, Python

- Designed and implemented a hybrid real-time/recorded ECG graph for a remote patient monitoring system.
- Developed a system for automatic patient compliance notifications.
- Redesigned a project's build pipeline for automatic staging and production deployment.

SEPTEMBER 2020 – MAY 2023
Hamad Medical Corporation: Research Associate | C++, Unity, Hololens

- Worked on telemedicine projects related to open surgery, minimally invasive surgery, robotic surgery, mixed-reality, and telementoring.
- Designed and implemented a protocol for sending a compressed, chunked point-cloud over the internet.
- Conducted user studies with medical experts to test applications.

JANUARY 2016 - DECEMBER 2019
Carnegie Mellon University: Research Assistant

- Defined and investigated oracle one-way automata.
- Explored multiple variations of oracle automata, and mapped-out the resulting language hierarchies for each definition.
- Worked as a teaching assistant for six courses, with duties including grading, proctoring, hosting office hours, and teaching.

PROJECTS

Winter 2021 - PRESENT
Detective: A non-linear detective game | Unity, C#

- Designed a branching, non-linear detective game.
- Planned, mapped out, and wrote three interactive cases.
- Created pipelines for automatically exporting character and location animation files and adding them to the project.
- Created pipelines for automatically creating story text files with boilerplate logic.
- Created a map and "address book" to allow the player to visit any location in the city.