Ahmad Taka

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EDUCATION

Massachusetts Institute of Technology (MIT)
Candidate for a Bachelor of Science in Electrical Engineering and Computer Science

- **Relevant courses:** Introductory Digital Systems Laboratory, Special Subject in Digital Design, Embedded Systems, Computer Systems Engineering, How to Make Almost Anything, Constructive Computer Architecture, Electromagnetic Waves and Applications
- **GPA**: 4.5
- **Awards:** Arthur J. Samberg '62 Scholarship, Bausch+Lomb Honorary Science Award, Rensselaer Medalist, Morais and Rosenblum UROP Award

EXPERIENCE

MIT Computer Science and AI Laboratory Feb. 2021 – Present
Human-Computer Interaction Researcher

- Co-authored a paper on unique detection methods for 3D printed objects (InfraredTags: Embedding Invisible AR Markers and Barcodes Using Low-Cost, Infrared-Based 3D Printing and Imaging Tools)
- Co-authored a paper (in submission) on fusing robotics and 3D printing
- Designed hardware for lab group and other projects
- **Environments**: Rhino3D, OpenCV, C/C++, Python, Solidworks, VSCode, PlatformIO

Timeback Incorporated Dec. 2022 – Present
PCB Designer

- Designed a high performance digital board for prototyping using KiCAD 6

Chainbridge Solutions June 2019 - Aug. 2021
Software Engineer

- Implemented FFT and BoofCV image processing frameworks in order to efficiently develop an Image Processing PDF Reader
- Pulled data from a centralized database and produced a Data Visualization dashboard using JavaScript for a better customer experience
- Spearheaded the initiative to incorporate Robotic Process Automation to speed up the development process of cross platform automations
- **Environments:**: Java BoofCV, Entellitrak, SQL, UIPath, jQuery, D3

MIT Physics Department Aug 2021 - Dec. 2021
Grader for Advanced Classical Mechanics

- Graded several assignments and helped students with complaints and other class related issues

RELEVANT PROJECTS

Automated 3D Printer

- Built a 3D printer and interfaced it with OctoPrint for automated printing. Accomplished under traditional prices, delivering exceptional quality

Galina: 3D FPGA LED Display Driver

- Used cheap digital circuitry to drive individual LEDs. Created a scalable design, while retaining high speed control.

GameMan: Full FPGA implementation of Original Gameboy (DMG)

- Worked on a team of three to build a hardware implementation of the Original Gameboy. Implemented complex display logic, and Z80 CPU

Nikolai

- A customizable 3D printed gauntlet with an embedded display, which allows a user to attract metal objects.

eETV V1: An Electric ATV

- Designed and built an Electric ATV fully from scratch with Raiphy Jerez (details here)

COMMUNITY INVOLVEMENT

Student Government, Athletics Chair, MIT Aug. 2019 - Aug 2021

- Managed discretionary fund for the gym
- Interacted with members of the dorm community; formed social spaces for like-minded gym enthusiast

Social Events Chair, MIT Aug. 2021 - Present

- Regularly hosted and managed social events. Managed team of seven with limited budget

SKILLS

Programming Languages	Web Design & Development	Electronic & Mechanical Design	Development Ecosystems	Prototyping	Languages
- C/C++	- HTML, CSS, JS	- MATLAB	- Visual Studio	- Arduino	- English
- Python	- NodeJS, Flask	- SolidWorks/Fusion	- Vivado	- Atom	- Arabic
- Java	- JQuery	- SPICE	- Eclipse	- PCB making	- German (elementary)
- SystemVerilog	- D3	- Rhino/Grasshopper	- Oracle SQL		
- SQL	- React	- KiCad	- PyCharm, IntelliJ		