JOHNNY BUI

Third-Year EECS Student at MIT

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SUMMARY

I am passionate about solving **real-world problems** through innovative software development. From **improving image search relevance** at JPL to **reducing human error** in the MIT yearbook by over 50%, I have proven experience in crafting applications that simplify the lives of users.

EDUCATION

Electrical Engineering and Computer Science

Massachusetts Institute of Technology

Aug 2017 – May 2021 Cambridge, MA 4.9 GPA

EXPERIENCE

Search Team Intern

Jet Propulsion Laboratory

Jun 2019 – Aug 2019 La Cañada Flintridge, CA

- Led research on improving the relevance of image search results through contextual tagging and image deduplication.
- Developed a performant Python library that extracts and infers the contents of an image using surrounding webpage text and image analysis tools.
- Implemented a highly-scalable image deduplication pipeline that is capable of comparing resized and annotated graphics against millions of stored images in 0.5 seconds.
- Designed and developed a production-ready modern search interface in React.js that improves result discoverability and user experience.

EECS Instructor

MIT Global Teaching Labs

Jan 2019 Amman, Jordan

- Prepared and presented a rigorous curriculum in Arduino and Python to international high school students.
- Worked with the school administration to design a functional makerspace for students.
- Served as a group mentor for a hackathon hosted by the high school.

Technical Director

MIT Technique

Sep 2017 - Present Cambridge, MA

- Develop in-house solutions to solve challenges relating to the design and management of the MIT yearbook.
- Manage storage and database infrastructure to ensure photos and student data are highly-available and secure.

RECOGNITION

- Named as US Department of Education Presidential Scholar (2017).
- Featured in MIT News for Vegetable Assassin final project (2019).

SKILLS

Python, JavaScript, Node.js ●●●●●

C++, MongoDB, React.js ●●●●○

COURSEWORK

- 6.004 Computation Structures
- 6.08 Embedded Systems
- 6.006 Introduction to Algorithms
- 6.031 Elements of Software Construction
- 6.033 Computer Systems Engineering
- 6.828 Operating System Engineering

PROJECTS

Vegetable Assassin
vegetableassass.in

- Worked with a small team to design and implement a parody of the popular "Fruit Ninja" game, using a foam sword as a controller.
- Led development of the WebSocket-based communication system between the sword's microcontroller and client web browser to enable low-latency and high-bandwidth updates to sword position.
- Wrote web client code and a fully-featured 3D JavaScript game to display the game state and detect collisions in a web browser.

Simple Ping
simpleping.dev

- Developed and deployed a fast-loading and minimal latency measurement tool that runs in the web browser on desktops, laptops, and mobile devices.
- Uses WebSocket for low-overhead ($<$1ms) ping measurement and dependency-free JavaScript for maximized client compatibility.

Technique Student Portal
tnqportal.mit.edu

- Database-backed web app that simplifies entry and management of senior biographical information for yearbook.
- Implementation resulted in complete elimination of reported errors in senior biographical information from 2018-2019.