

# Nader Jemel

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## EDUCATION

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### Massachusetts Institute of Technology

Cambridge, MA

*B.S./M.Eng in Computer Science and Engineering*

*Sep. 2019 – Expected Feb 2025*

- **Relevant coursework:** Software Performance Engineering, Design and Analysis of Algorithms, Computer Systems Engineering, Linear Algebra, Probability and Random Variables, Signals, Systems and Inference, Discrete Math and Proof for CS, Fundamentals of Programming, Digital Systems Laboratory, Introduction to Machine Learning
- **Current coursework:** Advanced Computational Biology, Quant Methods for NLP, Theory of Computation

## EXPERIENCE

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### Undergraduate Researcher

Jun 2022 – Aug 2022

*Tsai Laboratory at MIT*

*Cambridge, MA*

- Analyzed EEG data from participating patients using Matlab to study Theta and Gamma frequency couplings
- Contributed to an eye and head estimation model to measure patients' interactions with the therapy from videos

### Undergraduate Researcher

Jun 2021 – Aug 2021

*MIT Energy Initiative*

*Cambridge, MA*

- Performed Technoeconomic Analysis of Options for Decarbonizing Freight Transportation
- Analyzed and read multiple reports by energy agencies and companies
- Studied the cost-competitiveness of different clean fuels for freight transportation

## PROJECTS

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### FPGA-Daw: A Digital Audio Workstation for FPGAs

Fall 2022

- Built a system that stores and plays audio loops. It has the ability to add audio effects and mix them together
- Designed a system that fetches and stores the audio data in external SD cards with zero latency after the first load
- Built a VGA User Interface controlled by a keyboard using PS/2

### Ranked second in Software Performance Engineering final group project: Leiserchess

Fall 2022

- Improved the data representation by decreasing the number of bits and using bitmask operations
- Parallelized our move tree search using Cilk
- Implemented other algorithmic and evaluation optimizations to increase the depth of our move search

## ACTIVITIES AND LEADERSHIP EXPERIENCE

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### 6.205: Digital Systems Laboratory - Lab Assistant

Sep 2023 – current

- Solving the class' labs and leading weekly office hours and checkoffs in a class taken by over 100 students

### Co-President of Delta Psi MIT Chapter

Sep 2021 – Jan 2022

- Collaborated with Interfraternity Council to discuss and brainstorm issues that fraternities are facing
- Responsible for budgeting food and dealing with contractors for the members and the house

## HONORS AND AWARDS

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- International Olympiad in Informatics (IOI) 2018 Bronze Medalist

## SKILLS

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**Languages and Frameworks:** Python, C/C++, HTML/CSS, Django, Bootstrap, SystemVerilog

**Developer Tools:** Git, Docker, AWS, Visual Studio, PyCharm, IntelliJ, CLion, Sublime Text

**Libraries:** Pandas, NumPy, Matplotlib, OpenCV

**Languages:** Arabic (Native), English (Fluent), French (Intermediate)