Marc Abi Zeid Daou

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EDUCATION

University of Massachusetts – Boston *Anticipated Graduation May 2026*
Bachelor of Science, Computer Science *Boston, MA*

- 3.80/4.0 GPA as of fall 2024, Dean's List
- Paul English Scholarship – Fall 2024
- MathWorks Scholar – Fall 2023
- First-Year Student Achievement Scholarship Award

SKILLS

- Programming Languages: Coq, R, Java, C, Python.
- Languages: French (Fluent spoken and written), Arabic (Fluent spoken and written).
- Development Tools: IntelliJ IDEA, PyCharm, Clion, RStudio, Coq IDE.
- Software Proficiency: Microsoft Office (Word, Excel, PowerPoint), Cloud Storage, Adobe (Photoshop, Illustrator)
- Others: GitHub, Arduino/Microcontroller, HTML, VMware Workstation Pro, OS (Linux).

PROJECTS

Huffman Compression Utility | https://github.com/marcazdaou/Huffman-Code *Sep. 2024 - Present*
Software Developer | C, Data Structures, Algorithm Optimization *Boston, MA*

- Developed a **high-efficiency Huffman encoding algorithm** in C, achieving up to **50%** file size reduction to significantly decrease storage and bandwidth requirements.
- Optimized **Min Heap structures** and implemented **bitwise operations**, reaching **O (n log n)** runtime and boosting encoding speeds by **30%** compared to standard methods.
- Enhanced memory management to handle large files (5 MB+) efficiently, supporting consistent performance on constrained systems and reducing infrastructure needs for data-heavy applications.

Autocomplete System | https://github.com/marcazdaou/Autocomplete *Nov. 2023 – Dec. 2023*
Search Systems | Java, Binary Search, Term Ranking, Data Structures *Boston, MA*

- Engineered a **high-performance autocomplete system**, processing **10,000+ query terms** with O(log N) binary search to efficiently identify and rank matches, significantly improving search efficiency over linear search methods.
- Implemented custom sorting algorithms for **lexicographic** and **reverse-weight** ordering, optimizing term ranking and delivering the **top 10 results** in under **50ms** for large datasets.
- Processed **large data** with minimal memory footprint, ensuring scalable performance even with large datasets and achieving high accuracy in term retrieval.

RSA Cryptosystem | https://github.com/marcazdaou/RSA-cryptosystem *Mar. 2022 – Apr. 2022*
Cryptography | Python, PyCharm, Secure Messaging, Algorithm Optimization *Boston, MA*

- Developed a secure **RSA cryptosystem** with **key generation**, **encryption**, and **decryption** functionalities for **2048-bit keys**, using optimized number-theoretic methods. Supported key ranges of **25-100** for efficient **key pair generation**.
- Developed **API-based command-line tools**, enabling secure **encryption** and **decryption** with **real-time processing** for applications in **secure communications**, **data protection, and confidential transactions**.
- Optimized RSA encryption/decryption with **O(log n)** complexity, enabling efficient processing of messages for scalable, high-performance encryption.

WORK EXPERIENCE

Pulpdent Corporation (Dental Industry) – Logistics Intern – Boston, MA *Jun.2023 – Aug.2023*

- Streamlined shipping operations by assisting with order fulfillment, backorder allocation, digitizing 10 months of packing slips, and improving inventory tracking and efficiency.
- Enhanced regulatory compliance by managing product complaints, updating sales and safety data, and ensuring up-to-date certification and labeling.

Waiter – Brouhaha Intown - Lebanon Jan.2020– Jun.2020

- Led a team of 3-4 staff members, overseeing table service, and ensuring high-quality customer interactions.

Runner – Bar Italia Kitchen & Bar - Lebanon Jan.2019– Jun.2019

- Developed strong leadership skills by ensuring smooth service operations during peak hours.