Borna Hemmaty

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Education

University of California, San Diego — La Jolla, CA
Mathematics-Computer Science B.S. — *Sep. 2021 – Jun 2025*

Experience

GBCS Group Backend Developer Intern | *JavaScript, Back-End Web Development* — October 2024 – Present

- Currently interning at GBCS Group, a green tech company focused on reducing carbon emissions in global fleet industries.
- Collaborating with cross-functional teams to gather design requirements and client feedback for backend development.
- Integrating multiple database requirements and optimizing backend functionalities for seamless performance.
- Gaining hands-on experience in database integration, remote collaboration, and green technology initiatives.

Projects

Recipe Book Application | *Java, JavaFx, MongoDB, Open-AI, DALL-E, Whisper* — September - December 2023

- Developed Recipe Book application with a team of 6 using JavaFx, incorporating 6 advanced features:
  - Dynamic recipe generation based on meal type and available ingredients.
  - Integration of Whisper API for capturing human input.
  - Utilization of OpenAI/GPT API for intelligent recipe generation.
- Added multi-device functionality, allowing users to access the application across different platforms.
- Implemented user account creation and login features using MongoDB for scalable data management.
- Leveraged DALL-E API to enhance the user experience by creating reference photos for generated recipes.

Huffman Tree Encoding and Decoding | *C++* — February 2023

- Developed an efficient Huffman Tree-based encoder and decoder in C++ for message encryption and decryption, showcasing advanced data compression techniques.
- Designed the construction of a Huffman Tree by analyzing the frequency of each character in the input message, enabling optimal encoding of characters with variable-length codes.
- Utilized priority queue data structures and custom comparator functions to construct the Huffman Tree in a time and memory-efficient manner, demonstrating strong algorithmic skills.

Fortune Telling Hut | *JavaScript, HTML, CSS, MongoDB, Node.js* — April 2024 - June 2024

- Added new functions to an existing Fortune Telling Hut in vanilla Js, HTML, and CSS
- Introduced login functionality using MongoDB to store saved fortunes and login
- Worked on applying a better developer experience by applying MVC Pattern as well as test cases for new features.

2D portfolio | *Kaboom.js, vite, HTML, CSS, Tiled* — July 2024 – September 2024

- Developed a Mario-like 2D portfolio game using Kaboom.js to showcase personal projects, leveraging HTML and CSS for seamless integration with a responsive web page.
- Implemented game mechanics, animations, and interactions to create an engaging and interactive user experience.
- Integrating maps designed with Tiled software to create an original environment for my portfolio.

Technical Skills

Coding: Java, Python, C/C++, C#, LaTeX, R, HTML, CSS, Typescript, R, Haskell, JavaScript, React
Technologies: Git, Blender, Vim, JUnit, Discord API, Tailwind CSS, Next.js, JavaFx, Open-AI, Whisper API, DALL-E API, MongoDB, R Studio, Material UI, Kaboom.js
Relevant Coursework: Design and Analysis of Algorithms, Software Tools and Techniques Laboratory, Discrete Mathematics, Mathematics for Algorithms and Systems, Security in Amazon Web Services, Computer Organization and System Programming, Theory of Computability, Advanced-Data Structures, Software Engineering, Advanced Software Engineering, Programming Languages: Principles and Paradigms