Alex Bittar

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EDUCATION

University of Notre Dame | Notre Dame, IN   Expected May 2026
Bachelor of Arts | Majors: Computer Science and Political Science

Universitat Politecnica De Valencia | Alcoy, Spain   August 2025 – July 2025

RELEVANT PROJECTS

Modern Web Development | Fitness Tracking Project   August 2025 – Present
Co-Developer
- Applied semantic responsive CSS (flexbox, grid) to develop accessible, user-friendly web interfaces for student users.
- Built a collaborative JavaScript fitness tracker using react and parse services integrating dynamic logging, routing, and visual progress tracking features for those who seek to track their fitness goals such as exercise and calorie intake.

Design and Analysis of Algorithms | Graph Representation and Simplification   January 2025 – May 2025
Developer
- Developed graph simplification routines to reduce problem size before computation, improving runtime performance by about ~40% using different algorithms such as Dijkstra's and some topological sorting.
- Implemented dynamic programming and greedy algorithms to model and solve problems via graph representations.

Human Computer Interaction | Campus Safety Project   January 2025 – May 2025
Project Lead
- Engineered and prototyped a mobile app to improve campus safety by providing the ability to track friends and report hazards on campus at any time, integrating user-centered design principles such as avoiding dark patterns.
- Coordinated a 3-person project team to gather data from ~50 students and complete a prototype in Figma using vector-based UI elements for accessible usability to all students on the Notre Dame Campus.
- Drafted and Conducted surveys to get user feedback and improve the app prototype between four iterations.

Data Structures | University of Notre Dame   January 2023 – May 2023
Developer
- Constructed software with direct memory management, pointer arithmetic, and dynamic allocation.by coding in C.
- Designed and tested algorithms using structures, applying sorting, searching and graph traversal by coding python.
- Coded fundamental data structures from scratch including linked lists, queues, hash tables, and trees in C.

ACTIVITIES

Drone Club of Notre Dame | Notre Dame, IN   October 2025 – Present
- Coded the flight movements of a drone using ArduPilot in collaboration with other engineers on campus from Computer Science and other disciplines while learning how to use new technologies such as Cursor.
- Engaged and adapted to learning about aerospace and mechanical engineering through other members of the club.

Hesburgh Library Hackathon | Notre Dame, IN   April 2025
- Built a 2D video game in Godot with a partner during a 24-hour hackathon while learning how to use the interface, scripting core gameplay features in GDScript to provide players with a smooth gameplay experience.
- Integrated sound, scene management, sprite animations, and collision detection within Godot to enhance player experience in a game that sought to raise awareness about global pandemics through its gameplay features.

EXPERIENCE

Au Bon Pain | Notre Dame, IN   October 2022 – Present
Student Worker
- Trained new employees on daily procedures, contributing to smoother onboarding and team performance.
- Balanced 15–20 weekly work hours alongside a full academic course load, demonstrating strong time management and organization using customer service, multitasking and communication skills.

TECHNICAL AND LANGUAGE SKILLS

Technical: Python, HTML/CSS, Shell Script, Git, Figma, React, Microsoft Office, MATLAB, C#, Vim, JavaScript
Language: Spanish (Fluent)