DANIEL MONZON

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EDUCATION

University of Florida, ***Herbert Wertheim College of Engineering*** **Expected Grad Date – May 2025**
Bachelor of Computer Science
Mathematics, Statistics, Physics minor's GPA 3.7/4.00
Technical skills: C++, Python, Arduino IDE & Board, Git, 3D Printing, Onshape, Tinkercad, Unity 3D, PyTorch, AlphaFold, TensorFlow, Bash, ARM, MATLAB
Relevant Coursework: Discrete Structures, Calc. 1, 2, & 3, Prog. 1 (Python), Prog. 2 (C++), Data Structures & Algorithms, Computational Algebra (MATLAB), Introduction to Computer Organization (ARM)

PROJECTS

Gator AVL Project Implementation **01/24-02/24**
- Implemented a custom AVL tree in C++14 for UF student account management, achieving O(log n) efficiency for operations including insertion, deletion, and search by leveraging AVL rotations for tree balance.
- Crafted interfaces for AVL tree functionalities with robust input validation and error handling, ensuring unique UFIDs and valid names, and executed commands with precision.
- Utilized CMake-based templates for development, ensuring comprehensive testing within project constraints to guarantee reliable and efficient code performance.

Sudoku Game Development in Python **03/23-05/23**
- Developed a Python-based Sudoku game using PyGame for UI, focusing on algorithm-driven board generation, user interaction, and state management in a collaborative team environment.
- Implemented unique digit constraints across a 9x9 grid with varying difficulty levels affecting initial board setup (30, 40, 50 empty cells for easy, medium, hard).
- Enhanced gameplay with interactive features for cell selection, digit sketching, and game state validation, supported by UI controls for reset, restart, and exit functionalities.

Advanced Minesweeper Engine in C++ with SFML **10/23-11/23**
- Implemented an advanced Minesweeper engine using C++, leveraging SFML for rendering. Utilized dynamic memory management, recursive algorithms for tile expansion, and event-driven design for input handling.
- Constructed a sophisticated GUI framework with SFML, integrating direct manipulation interfaces for input, procedural graphics for dynamic rendering, and data persistence for score tracking, optimizing UX with real-time feedback mechanisms.

PROFESSIONAL EXPERIENCE

Internship-Research Project – Gainesville, FL **08/22 – N/A**
Active Learning Program
- Utilized Python for advanced analytics and visualization of massive datasets, ensuring data integrity, automated RedCap database enhancements for operational efficiency.
- Led precision health research, integrating EHR data with AlphaFold, TensorFlow, and PyTorch, driving predictive insights in biomedical informatics.
- Expert in Python, machine learning, deep learning, artificial intelligence, and automated data management, with a focus on healthcare technology innovations.

STEMHaus – Wales, UK **05/23 – N/A**
Subject Instructor
- Aligned lesson plans with curriculum objectives to ensure comprehensive education.
- Simplified complex coding concepts, teaching Python to students aged 11-16.
- Developed and executed engaging teaching methods, emphasizing active participation.

REU – Athens, GA **06/23 – 08/23**
Research Assistant
- Developed AR tool for agricultural point cloud analytics, utilizing Unity 3D and VR/AR, for immersive data analysis and precision overlays.
- Enhanced tool with multi-user collaboration and external annotations, leveraging advanced tech solutions for scalable impact.
- Pioneered AR-driven dataset validation and comparison, boosting research efficiency and tech integration in agriculture.

LEADERSHIP/ACTIVITIES AND INVOLVEMENT

NVIDIA x ColorStack – University of Florida **01/11 – N/A**
Fundamentals of Deep Learning Program
- Completed an intensive 3-week in-person program focused on computer vision and natural language processing, earning an NVIDIA DLI certificate.
- Gained hands-on experience in training deep learning models and explored advanced neural network architectures.

IoT – University of Florida **04/23 – N/A**
Outreach Chair
- Coordinated outreach activities, increasing club visibility and engagement within the university community.
- Managed and secured funding from the University of Florida, ensuring adequate resources for club projects and events.
- Fostered relationships with other organizations and stakeholders, promoting collaborative ventures.

Environmental Research – University of Florida **06/22 – 09/23**
Co-Author
- Co-authored a research paper examining the environmental impacts of abandoned dams.
- Collaborated with fellow researchers, contributing significant insights in environmental conservation.
- Successfully published the paper in INDERSCIENCE