Matteo Gristina

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Education

San Diego State University **Graduating Spring 2025**

B.S. Computer Science *Dean's List 6/6 semesters, GPA: 4 of 4*

Relevant Coursework

- Machine Learning
- Algorithms
- Operating Systems
- Data Structures
- Computer Architecture
- Linux Security
- Linear Algebra
- Programming Languages

Technical Skills

Languages: C++, Python, C, Java, HTML/CSS, SQL
Developer Tools: VS Code, GCC/G++, GDB, Ubuntu VM, Eclipse, Google Cloud Platform
Technologies/Frameworks: PyTorch, NumPy, GitHub

Projects

Multi Level Paging Tool | *C++, GDB, Memory Management, OOP, Data Structures* **2024**

- Implemented a tree-based data structure to track and manage memory page information in a 32-bit system.
- Managed memory by dynamically creating and updating page tables, and output detailed access information for each memory address. Processes only occupies the number of pages and memory needed.
- Developed functionality to read and simulate memory accesses from a trace file, bitmasked page numbers and updated access statistics for each page.
- Leveraged GDB to debug using breakpoints, code stepping, and inspecting variables.

Python Image Processing | *Python, C, Haskell, Prolog, MATLAB* **2023**

- Developed a versatile Python script showcasing proficiency in integrating diverse programming paradigms:
  - Integrated a robust imperative program in C for efficient low-level operations.
  - Implemented a functional program in Haskell, emphasizing concise and expressive code.
  - Incorporated a logical program in Prolog for effective rule-based reasoning.
- Leveraged advanced image processing capabilities of MATLAB within the Python script:
  - Integrated MATLAB functions to enhance image analysis and manipulation.

Connect4 Bot | *C++, Minimax Algorithm, Alpha Beta Pruning* **2023**

- Designed and implemented the bot's decision-making logic using minimax algorithm. Optimizing with alpha beta pruning for efficiency and performance to ensure seamless and rapid moves in real-time gameplay.
- Conducted extensive testing and debugging to identify and resolve potential issues, ensuring the bot's reliability and robustness in various gaming scenarios.

GUI and HUD | *Valve Data Format, Git, GitHub* **2019-2021**

- Responsible for designing and implementing graphical user interface and heads-up display mod in video game Team Fortress 2, which decluttered user interfaces and improved readability in game.
- 500+ files uploaded with Git, and managed through GitHub for distribution, sophisticated version control, and collaboration using pull requests.
- 25,000+ downloads from third party video game modding sites.

Extracurricular / Leadership

Music Production and Promotion **Spring 2020 – Present**

Producer, Graphic Designer, Manager

- Produced electronic music using industry standard software, Ableton 10, working on over 300+ projects, and learning over 50+ tools to aid in the creation process.
- Promoted using multiple media channels to reach peak of 2,000 monthly listeners and over 75,000 streams
- Created vision for consistent brand image, and utilized After Effects video editing software to create and design promotional material. Additionally planned out releases with scheduled and targeted advertisement.

JSA Undokai **Spring 2022 and Spring 2023**

Club Member

- In both years, took first place in Southern California regional competition against other universities.
- Lead team and competed alongside Japanese Student Association in co-ed, mixed athletic events competition.