MATTHEW PALLAN

📞 410-762-8976   ✉ mtp@umd.edu   in linkedin.com/in/~mp   🔘 github.com/6mp

Education

University of Maryland   **Sep. 2022 – Expected May 2026**
B.S. in Computer Science — B.A. in Real Estate Development — GPA: 3.67   *College Park, Maryland*

Mount Saint Joseph High School   **Aug. 2018 – May 2022**
High School Diploma   *Baltimore, Maryland*

Experience

Self-Employed   **April 2020 - July 2021**
Software Engineer   *Baltimore, MD*
- Successfully orchestrated and executed the seamless deployment of complex software solutions on a large scale for a diverse array of customers, while ensuring optimal performance and effectively addressing any challenges that arose throughout the process, resulting in a high level of customer satisfaction and retention.
- Acted as a full stack developer, utilizing a variety of programming languages and frameworks to develop and maintain multiple software projects.
- Demonstrated expertise in utilizing advanced reverse engineering techniques to meticulously analyze a wide range of binary files for research purposes, resulting in a deep understanding of the inner workings of the software and uncovering key insights that were used to inform and drive further research and development.

Projects

Monte Carlo Options Pricing Engine | *C++, CMake*   **January 2023**
- Implemented Monte Carlo simulation techniques to accurately price vanilla and digital European options.
- Leveraged strong understand of design patterns to create a user-friendly and robust interface.
- Emphasized performance optimization by focusing on low-level concepts and utilizing the latest modern C++ features, such as concepts and compile time branching.

Pattern Scanner | *C++, CMake*   **March 2022**
- Designed and implemented a highly efficient binary pattern scanner to swiftly identify and locate similarities in a program's memory, which led to improved efficiency
- Utilized advanced AVX-256 instructions to significantly accelerate searching by a factor of 5x compared to a traditional, non-vectorized pattern scanner, resulting in significant time savings and improved overall performance.
- Integrated various modern C++ features such as templates, lambdas and smart pointers to enhance the ease of use and safety of the scanner, resulting in a more user-friendly and reliable tool.

Software Protection Driver | *C++, Windows Kernel API*   **January 2022**
- Programmed a Windows driver to protect the process of my choice from malicious actors attempting to manipulate it.
- Created corresponding user-mode application to issue encrypted IOCTL commands.
- Dynamically resolved all function imports to mitigate Import Address Table tampering.

Secure Software Loader | *C++, Java, SQL*, Windows API   **October 2021**
- Designed a client and server to allow for secure loading and management of products on Windows.
- Client employed various anti-debugging and anti-reverse engineering techniques to remain uncompromised.
- Sever stored data in MySQL database and communicated with client through sockets.

Technical Skills

Languages: C++, C, Python, Java, Rust, SQL, Typescript/Javascript
Tools: Git, CMake, Gradle, IntelliJ/Clion, Visual Studio
Technology/Frameworks: Github CI/CD, Windows, Linux, React/Next.js

Extracurricular

Queens Web Development Club (QWeb)   **October 2022 – Present**
Member and Winter Development Lead   *Queens University*
- Participated in a web development club, contributing to group projects and learning about new technologies.
- Took on a leadership role, managing a team and guiding the project from conception to completion.
- Utilized my web development skills and ability to work collaboratively on successful projects.