**FREDERICK BERBERICH III**

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EDUCATION

**Marist College, School of Computer Science and Mathematics –** GPA: **3.5 / 4.0 |** Dean’s List **Poughkeepsie, NY**

Bachelor of Science, Cybersecurity – Minors in Computer Science, Information Technology, & Information Systems Spring 2025

EXPERIENCE

**Marist - IBM Joint Study Poughkeepsie, NY**

Systems Administrator August 2024–Present

* One of six Marist College students chosen for an elite program, partnering with IBM academic research (8% overall acceptance rate).
* Manages the Enterprise Computing Research Lab (ECRL) data center consisting of ten racks of IBM, Lenovo, Cisco, and Juniper switches, routers, and servers.
* Assists Capstone students with their projects which include installing, configuring, and maintaining Ubuntu, RHEL, and Windows servers.
* Collaborate with faculty to help maintain/configure research projects running on servers within the lab.

**Marist College CS/IS/Information Technology Poughkeepsie, NY**

Networking Lab Assistant March 2023-May 2024

* Conducted maintenance on Cisco Switches and Routers by replacing fans or updating software on equipment installed on the racks.
* Created and designed topologies that are used to help construct various networks.
* Organized and restructured other equipment stored on the 8 racks in the lab.
* Tutored students about hardware, network protocols and other information that is taught and utilized in the class Internetworking.

**Marist College Summer Research Fellowship Poughkeepsie, NY**

Researcher May 2023–August 2023

* Created a stable and isolated testing environment to research Low Energy Bluetooth (BLE).
* Used Wireshark to collect over 20 data captures on advertising packets produced by BLE devices.
* Identified specific attributes that are found only in the packets coming from certain types of BLE devices.
* Designed a step-by-step process that allows BLE devices to be fingerprinted and tracked through the MAC randomization protocol. Presented findings at **CURSCA 2024** & **2024** **Hudson Valley Cyber Summit**.

PROJECTS

**Mac Malware Analysis Capstone Project Poughkeepsie, NY**

Research FellowFall 2024

* Conducted research on Trojan viruses affecting Apple computers which could imply persistence on an Apple device.
* Utilized *EsLogger* to collect and convert Mac system data from JSON files to CSV files for data analysis.
* Analyzed and cleaned 24 CSV files through *Jupyter Notebook* and *Pandas* library to create a single data frame, preparing for the implementation of machine learning.
* Using the K-Nearest-Neighbors algorithm (KNN) and Sci-Kit Learn python library, developed a machine learning model that categorizes whether a Mac computer is running malicious software with a model accuracy of 99.25%.

**Metaspoitable Pen Testing Project Poughkeepsie, NY**

Home Lab Spring 2023

* Through VMware, created a virtual network comprised of Kali Linux & Metasploitable 2 virtual machines.
* Using Nmap, a vulnerability scan was conducted on a metasploitable 2 virtual machine.
* Tested an exploit found during a vulnerability scan on a virtual machine using Metasploit on the Kali Linux virtual machine.
* Explored ways to mitigate vulnerability such as updating certain software on the virtual machine and installing firewalls.

**Ceph Cluster Poughkeepsie, NY**

Marist - IBM Joint Study Project Fall 2024 - Present

* Maintaining a Ceph cluster and multiple VM host servers to provide a scalable Platform as a Service (PaaS) solution for Marist faculty, staff, and students**. Awarded First Place in the IBM Mid-Hudson Valley Tech Connect Conference.**
* Expanding an HPC cluster managed by Slurm, containing over 800 cores and 48 GPUs, optimized for handling AI and computational workloads.

Leadership

**Marist Cybersecurity Club**

Vice President

* Planned and executed engaging cybersecurity club events, ensuring smooth operations and member participation.
* Secured industry professionals as guest speakers, enriching members’ knowledge and exposure to real-world cybersecurity challenges.
* Facilitated networking opportunities by connecting members with experienced cybersecurity professionals.
* Led club meetings, fostering discussions on cybersecurity topics and promoting member engagement.
* Promoting the club to incoming freshmen, increasing membership and participation through outreach initiatives.

SKILLS & Relevant Coursework

**Skills: Virtualization** (VMware, KVM (virt-manager), Cisco Packet Tracer, GNS3, Docker) **Vulnerability Scanners & Sniffers**

(Wireshark, Nessus, Nmap) **Machine Learning** (Jupyter Notebook) **Data Mining & Analysis** (Python, Pandas, Scikit-Learn), Git Bash, GitHub

**Security Frameworks:** MITRE ATT&CK, NIST Cybersecurity Framework, ISO 27001

**Operating Systems:** Windows, macOS, Linux (Ubuntu, Kali), Red Hat Enterprise Linux, FreeBSD

**Programming Languages:** Python, Java, JavaScript, SQL, PHP, HTML, CSS

**Relevant Coursework:** Intro to Programming (**Python**), Software Development I (**Java**), Software Development II (**HTML/CSS/PHP**),

Intro to Cybersecurity (**Frameworks),** Computer Forensics (**Kali Linux**), Hacking & Pen Testing (**Frameworks**)**,** Network Virtualization (**FreeBSD**),

Calculus I, Discrete Math, Intro to Statistics