Neil H. Patel

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EXPERIENCE

Mandate Democracy Foundation — May 2025 - Aug. 2025
Cyber Security Intern — *Richmond, VA (Remote)*
- Leading the deployment of a **React Native** referendum voting application across **50+** local townships and municipalities, enhancing civic participation and streamlining local democratic processes.
- Integrating an **IBM's secure backend** to safeguard voter data confidentiality and utilizing a **HubSpot CRM** for efficient stakeholder communication and user engagement tracking.
- Directing project management as **lead intern**, developing and managing comprehensive **project timelines and deliverables**, enabling timely execution and alignment across technical teams.

Virginia Discovery Museum — Jan. 2024 - May 2025
Full-Stack Development Intern — *Charlottesville, VA*
- Engineered a full-stack volunteer management system using **React** and Firebase, enabling real-time tracking, shift scheduling, and automated approvals, reducing administrative task time by **11%**.
- Optimized database structure and implemented **Firebase Firestore** with indexed queries, achieving **sub-200ms** response times for shift lookups and admin actions.
- Enhanced scalability and reliability through role-based authentication and dynamic UI rendering, resulting in a **40%** reduction in manual coordination reported by museum staff.

Virginia Solar Car — Jan. 2024 - May 2025
Telemetry Subteam Lead — *Charlottesville, VA*
- Developed and implemented real-time telemetry communication in **C**, leveraging XBee modules to securely transmit and receive critical data via **Amazon IoT MQTT** broker, significantly enhancing the solar car's remote monitoring capabilities.

PROJECTS

XSS Machine Learning Model | C++, Python — May 2025
- Engineered a reinforcement learning–based machine learning model in **C++** to detect early on-site Cross-Site Scripting (XSS) attacks, achieving a detection accuracy of **96%**.
- Designed and trained the model to proactively identify malicious patterns in user input, enabling real-time prevention of XSS threats and strengthening overall web application security.

Political Bias Compass | HooHacks Best Beginner Project — Mar. 2025
- Developed a **Flask-based** web application in **Python** that analyzes political bias in news articles using a **linear regression** machine learning model, achieving **96%** accuracy in sentiment analysis.
- Won "Best Beginner Track" at HooHacks 2025, outperforming **60+** teams by delivering a high-impact tool that visualizes ideological leanings and promotes media literacy.

TECHNICAL SKILLS

Languages: C, **Java**, **JavaScript**, Python, SQL**, React Native, C#, PHP, C++**
Technologies: Docker, Flask, Git, Node.js, PyTorch, React.js, REST APIs
Tools: Apache Beam, Hadoop, Spark, Jira, **Jupyter**, Snowflake, **Tableau**

EDUCATION

University of Virginia — May 2028
B.S. in Computer Science, Systems Engineering — *Charlottesville, VA*
Relevant Courses: Machine Learning, Data Structures & Algorithms, Computer Systems & Organization