Michael Joseph Williams

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Active Top Secret Security Clearance (TS/SCI Full Scope Poly)

Education

University of Maryland, College Park, MD

August 2016 - Present

- GPA: 3.93
- Expected graduation date: May 2020
- Banneker/Key Scholar, Northrop Grumman Engineering Scholar
- Pursuing a Bachelor of Science in Computer Science with a double Minor in Global Engineering Leadership and Cybersecurity (ACES)
- University Honors Program, Advanced Cybersecurity Experience for Students (ACES)
- ACES Cybersecurity Competition Team
- National Cyber League

Languages & Platforms

- **Languages:** Java, Python, C, Ruby, OCaml, MySQL, Swift, JavaScript, TypeScript, HTML/CSS, MATLAB, R, Bash, Powershell, Intel x86 Assembly, MIPS, WebAssembly
- **Software:** Splunk, ELK, Xcode, Android Studio, Visual Studio, Eclipse, IntelliJ, RStudio, Jenkins, Git, Manuscript, JIRA/Confluence, Bugzilla, LaTeX, VMware, VirtualBox, Hibernate, Unity 3D, AutoDesk Inventor, Maya
- **Operating Systems:** Linux/UNIX, Kali Linux, Mac OS X, Windows

Coursework

- **Math:** Discrete Structures, Algorithms, Multidimensional Calculus, Data Structures, Applied Probability and Statistics
- **Programming:** Object Oriented Programming I & II, Computer Systems, Organization of Programming Languages, Reinforcement Learning, Game Programming, Human & Computer Interaction
- **Engineering:** Reverse Engineering, Computer Integrated Manufacturing, Digital Electronics
- **Cybersecurity:** Foundations of Cybersecurity I & II, Advanced Digital Forensics, Cryptology, Data Analysis and Visualization for Cybersecurity
- **Leadership:** Engineering Leadership, International Business Cultures in Engineering and Technology, Advanced Entrepreneurial Opportunity Analysis in Technology Ventures, Discovering New Ventures

Technical Projects

- **AWS Security Alert Filtering System**
  Worked with a team of AWS developers to develop a centralized system to efficiently filter and route Amazon Web Services security alerts. Developed with Amazon Lambda, DynamoDB, and Python.

- **Honeypot Research Project**
  Designed a research project with a team to analyze the motivations behind cyber-attacks. Architecture, maintenance, and analysis scripts were developed with Linux, Bash, and Python.

- **NextNOW Fest Apps**
  Developed iOS and Android mobile applications for the NextNOW Fest hosted by The Clarice at the University of Maryland, College Park. Apps were developed with Xcode and Android Studio.

- **NSA Cyber Defense Exercise (CDX) Hacking Challenge Modules**
  Developed hacking challenges for the CDX capture the flag event such as a remote buffer overflow and a Diffie-Hellman key exchange challenge. Utilized Linux and Python to create and solve the challenges.

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- **Seat Snacks (iOS)**
  Currently developing an iOS mobile application that allows users at sporting events to order food and drinks straight to their seats. Created with Swift, Xcode, Google Firebase backend, and Stripe API.

- **Home Access Center App**
  Created an Android application to provide a user-friendly mobile alternative for high school students to easily check their grades. Built with Java and Android Studio.

- **GroupHouse Productions Website**
  Designed an interactive website for GroupHouse Productions, displaying their media projects. Created with HTML, CSS, and JavaScript.

Work Experience

Software Engineering Intern, Next Century Corporation

January 2019

- Prototyped functionality for exporting a protective distance map to Keyhole Markup Language (KML) using the Bing Maps V8 API and JavaScript.
- Formatted KML output for integration with popular mapping software such as Google Maps, MARPLOT, and IncidentView, adding labels and HTML pop up descriptions.
- Performed UX improvements and bug fixes on Android and Windows platforms before 5.3 release.

June 2018 – August 2018

- Developed database schemas for storing, searching, and querying data from the Hazardous Substance Data Bank (HSDB). Backend database created with MySQL and integrated with Java/Hibernate. Frontend database created with SQLite and C# for mobile devices.
- Designed Android mobile application for the U.S. Department of Health and Human Services to assist first responders with hazardous chemical identification and decontamination procedures. Developed with Android Studio and Java.
- Integrated the web application version with the backend database, utilizing HTML and JavaScript to search and display the data.

Teaching Assistant, University of Maryland, College Park

January 2018 – May 2018

- Instructed students in class, teaching them core constructs and Object Oriented principles of Java and Processing.
- Led review sessions for students prior to exams and quizzes.
- Assisted students in completing programming assignments in office hours and on Piazza.

Computer Science Engineer Intern, Parsons Corporation

January 2018

- Developed a utility to reduce Splunk querying by filtering initial machine data in ELK.
- The utility used a Python elasticsearch library alongside a parser and lexer to handle queries.
- Created a simple UI for the utility with Yad/Zenity and Bash.

January 2017 – August 2017

- Conducted remote memory acquisition and analysis with F-Response, FTK Imager, EnCase, and the Volatility Framework. Automation scripts written in C# and Powershell.
- Performed analytics for intrusion detection utilizing Splunk, ELK, Snort, and Bro.
- Created challenge modules for NSA's Cyber Defense Exercise (CDX) using Linux and Python.