

# Alexander Karapetkov

Sterling, VA

Recent Computer Science graduate with a strong foundation in cybersecurity and a passion for safeguarding digital environments. Detail-oriented and enthusiastic, with a proven ability to adapt to new challenges and technologies. Adept at problem-solving and leveraging excellent communication skills to collaborate effectively across teams. Driven by a commitment to continuous learning and delivering innovative security solutions.

## Contact

### Email:

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### Github:

[Alex-Karapetkov](https://github.com/Alex-Karapetkov)

### LinkedIn:

[alex-karapetkov](https://www.linkedin.com/in/alex-karapetkov)

### Portfolio:

<https://alex-karapetkov.github.io>

## Education

### James Madison University

Computer Science (B.S.)

May 2024

President's List

Dean's List

Harrisonburg, VA

## Certifications

CompTIA Security+  
CE Certified



## Leadership & Involvement

Member of JMU Delta Phi Epsilon  
Professional Foreign Service  
Society

Secretary for JMU Asian Student  
Union

Virginia Governor's German  
Language Academy

## Projects

### Traveling Salesman Problem Python

May 2024

- Explored NP-complete problem-solving techniques by implementing exact and approximate algorithms in Python for Traveling Salesman Problem
- Developed performance analysis skills by generating test cases, analyzing algorithmic runtime, and comparing solutions using runtime data
- Enhanced technical communication by presenting reductions, strategies, and outcomes through slides, pseudocode, and performance metrics

### 8-bit RISC-V ALU Verilog

April 2024

- Designed and implemented an 8-bit RISC-V Arithmetic Logic Unit in Verilog
- Developed a modular design with testbench files for each component, ensuring robust testing and validation through timing diagrams and behavioral simulations
- Enhanced proficiency in hardware description languages, digital circuit design, and debugging complex systems, with focus on efficiency

### Command Line Shell C

Nov 2023

- Developed a command-line shell in C, implementing robust features including process control, environment variable management, and secure handling of user input/output, ensuring resilience against vulnerabilities
- Gained hands-on experience with system-level programming concepts, enhancing understanding of process isolation and privilege boundaries
- Enhanced skills in secure programming practices, including input validation and environmental variable handling, to prevent exploitation

## Skills

**Cybersecurity:** Familiarity with access control, cryptography, cyber forensics, data security, firewall configuration, disaster recovery planning, malware identification, information security management, mobile device security, network security, security awareness, security configuration, security management, security policies, threat detection, threat management

**Programming:** Java, Python, HTML, CSS, C, JavaScript, C#, Ruby, Haskell, Rust, Verilog, JSON, Bash, Powershell

**Soft skills:** Interpersonal communication, collaboration, problem-solving, organization, time management

**Languages:** Bilingual Bulgarian, Intermediate German

## Work Experience

### Site Manager at JMU Recreation

Aug 2022 - May 2024

- Ensured safety, compliance with policies, and efficient programming of Intramural Sports, including conducting officials' training sessions, participants' pregame meetings, and performance evaluations
- Employed first responder principles as needed (CPR, AED, Bloodborne)