

# Charles Engler

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Github: @CharlieEngler

*Computer science student looking to turn my passion for computer programming into a career by gaining meaningful experience in a post-secondary environment where I can both grow and contribute*

## EDUCATION

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**WPI, Worcester MA** - Computer Science Major with a Cybersecurity focus (2022 - Present)  
**Classes:** Software Security Engineering (CS 4401), Operating Systems (CS 3013), Software Engineering (CS 3733), Algorithms (CS 2223), Embedded Computing (ECE 2049)  
**Performance:** 3.84 GPA, Dean's List

## SKILLS AND PROFICIENCIES

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**Programming:** C, JavaScript, ReactJS, Python, HTML, CSS, Assembly, C#, PHP, Java

**Technologies:** Linux, Embedded Systems, Relational and Document Databases, Computer Networking Security, Git, MS Word, MS Outlook, MS Excel, Google Drive, Containerization Software, AI Exposure

**Other:** Cybersecurity Defense and Attack Techniques, Executive Collaboration, Time Management, Problem Solving, Communication, Critical Thinking, Forklift Certified

## PROJECT EXPERIENCE

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### Software Security Engineering (2025)

- Understanding stack-based, format string, and heap-based buffer overflow attacks
- Exploiting around security features, such as canaries, NX stack, PIE, ASLR, and RELRO
- Attacking binaries and servers running binaries to obtain a shell
- Exploring advanced binary exploitation with consideration of low-level optimizations and features

### Operating Systems Projects (2025)

- Multithreaded CPU Raytracer
  - Instantiates processes on multiple threads to render a raytraced scene and generate a video
  - Parallelizes physics, rendering, and file saving
  - Implements semaphores, barriers, and critical region management to optimize code execution
- Virtual Memory Paging Simulation
  - Simulates page tables in a 64 byte address space with 128 bytes of virtual memory
  - Handles multiple processes with separate pages and page tables
  - Swaps pages and page tables between physical memory and swap files

### Interactive Qualifying Project (2024)

- Collaborated with a team of four other students
- Analyzed barriers to obstructive sleep apnea diagnosis and awareness
- Interviewed and surveyed patients in addition to field professionals
- Developed a proposal for an awareness campaign to be run by healthcare professionals

### Software Engineering Project (2024)

- Website developed with a NextJS front end and an AWS RDS and Lambda back end
- Entity, boundary, and control class concepts used to develop final deliverable
- Git collaboration used to track files and control versions between multiple developers
- Time management, conflict resolution, and division of work used to effectively develop as a team

## WORK EXPERIENCE

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### The Home Depot, North Hampton, NH

June 2022 - Present

*Sales Associate, Freight and Receiving Team Member*

### Timberlane School District, Plaistow, NH

July 2022 - August 2022

*IT Assistant*

### Riverwoods Exeter Retirement Community, Exeter, NH

September 2019 - February 2022

*Waitstaff Manager, Assisted Living Server, Dishwasher, Dining Server*

## ORGANIZATIONS

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- Phi Kappa Theta Fraternity: President 2025, Vice President of Finance and Risk 2024
- WPI Cybersecurity Club, WPI Outing Club