Derek Kwon

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Personal website: https://dereks-space-portfolio.netlify.app/

Education

William and Mary | Williamsburg, VA **Graduated December 2024**
Degree: Bachelor of Science Major: Computer Science
GPA: 3.60 Dean's List for Spring 2022, Fall 2023, Spring 2024, Fall 2024
Relevant Coursework: Web Programming, Intro to Software Development, Cyber & Information Security Management, Intro to Game Development, Computer Graphics, Computer Organization, Reinforcement Learning
Campus Activity: W&M Game Development Club: Member **2023 – 2024**

Skills/Proficiencies

General Skills: Version Control with Git, Object-oriented design, Software design methodologies, collaborative development, reinforcement learning models, SQL, Azure cloud databases, Linux
Programming Languages: JavaScript, TypeScript, Python, Java, C#, C++, R
Game Dev Skills: Unity game engine, Blender, Software architecture for games, pixel art
Web Dev Skills: NodeJS + ExpressJS, ReactJS, HTML, CSS, ThreeJS
Cybersecurity Skills: Linux CLI, Secure development lifecycle, secure server configuration, network scanning, penetration testing, Kali Linux, Metasploit, Wireshark, TCPdump, Suricata
Languages: Korean (fluent)

Experience (Full time internships)

Content Data Specialist Intern | Tesla Government | Falls Church VA **June 1st 2023 – August 25th 2023**
• Gained security training in handling classified information (FOUO, PII, CUI) to learn how to maintain confidentiality of company data
• Wrote Python scripts to automate cleaning, filtering, and reformatting of maritime data so that it could be properly displayed on maps on company's information sharing site
• Hack-a-thon: Collaborated on a machine learning model to assign tags to foreign relations articles and won 2nd place in a company-wide hack-a-thon
• Data Visualization Competition: Used RStudio to make bubble plot visualizations for African foreign relations data in a fun competition that the company used to gather visualizations for Africa
• Scraped data from both English and Korean online sources using Selenium and BeautifulSoup and put the data into structured data tables to add to company's information on North Korea

Data Intern | MacDowell Law Group | Fairfax VA **August 5th 2024 – September 10th 2024**
• Used natural language processing and regular expressions in python to reformat large excel spreadsheets
• Identified company vulnerabilities by identifying differences within data sheets
• Helped consult regarding a potential 3rd party software vendor interested in adding their AI chatbot to the firm's website

Projects

Personal Project: Solo Developed Game

- Developing a game solo using Unity game engine and Blender modeling software
- Familiarizing myself with Unity Debugger to pinpoint errors in code
- Gaining a much better understanding of object-oriented development and good software architecture
- Game focus is on exploring beautiful underwater environments and advanced enemy AI

Personal Website

- Used HTML, CSS, JavaScript, ThreeJS to build a personal website from scratch
- Made a rocket model in Blender and imported it into ThreeJS project
- Gained an understanding of 3D web graphics and advanced frontend design

Game Development Group Project: Cat-aclysm

- Collaborated with 3 other students to develop a fully-fledged game using C++ and SDL2
- Implemented model-view-controller architecture and inheritance for clean and organized code
- Used Git collaboratively and learned how to fix merge conflicts
- Was responsible for making the artwork and sprites, map rendering, and NPC interaction

Penetration Testing Labs
- Simulated penetration testing attacks on a dummy vulnerable server using SQL & command injection, cross-site scripting, cross-site request forgery, and backdoors via 3rd party vulnerabilities
- Learned the importance of input validation and encoding output, proper session management, and secure server configuration

Web Programming Group Project: Virtual Conference Room using Robert's Rules of Order
- Working in a group with 6 other students to build a virtual conference website that uses Robert's rules of order for more organized communication and collaboration
- Website is made with vanilla JavaScript + jQuery in frontend, NodeJS + ExpressJS and Azure SQL database for backend
- Am responsible for implementing the server and server-side operations such as user authentication, LRU caches and batch processing
- Also responsible for ensuring security of website by encrypting passwords with bcrypt and sanitizing input

Deep Reinforcement Learning Hide-and-Seek with Unity ML-Agents
- Trained two agents with deep reinforcement learning using Unity's ML-Agents Library
- Developed a game in which players could play against the trained agents

Google Cybersecurity Certificate
- Wrote Linux commands, SQL queries, and Python for cybersecurity
- Gained foundational understanding of communications between devices and the internet and how they may be vulnerable
- Used popular cybersecurity tools such as Wireshark, TCPdump, Suricata, Splunk, VirusTotal to accomplish common cybersecurity tasks
- Gained security awareness and awareness of rise in third-party related attacks and increasing supply chain vulnerability