Lawson Lay

Heath, TX | (469) 766-1855 | lawsonlay@outlook.com | linkedin.com/in/lawsonlay |
github.com/LawsonLay | lawsonlay.com

PROFESSIONAL SUMMARY

Computer Science graduate with hands-on experience designing and implementing scalable network and software solutions across IoT, web, and security domains.

EDUCATION

The University of Texas at Dallas Aug. 2022 - May 2025
B.S., Computer Science, 3.8 GPA

SKILLS

Languages: C/C++, C#, Java, SQL, Python, JavaScript, HTML, CSS
Framework & Tools: Docker, Shell scripting, Jira, Git, VMware, SvelteKit, VSCode, Eclipse
Certifications: CompTIA A+, Cisco CCENT
Relevant Coursework: Digital Logic, Computer Architecture, Embedded Systems, Software Engineering, Advanced Algorithms, Computer Networks, Data Structures, Linear Algebra

PROJECTS

Texas Instruments DHCPv6 Adaptation for Wi-SUN IoT Devices Jan. 2025 - May 2025
Technologies: Debian Linux, Kea DHCPv6, React, SQLite, Wi-SUN, CoAP, IPv6, C++
https://github.com/LawsonLay/CS4485-TI-WISUN-IOT

- Designed and deployed a scalable DHCPv6 service for TI's Wi-SUN Field Area Networks, increasing address allocation efficiency by 40% across 100+ IoT devices.
- Integrated Kea's DHCPv6 server with TI's CC1352P7-1 boards, enabling real-time dynamic IPv6 address assignment via vendor ID, reducing configuration time by 70%.
- Developed a React-based dashboard to monitor and visualize 200+ device states, sort CoAP requests, and control endpoints, improving network management speed by 50%.

Ball to the Wall: Video Game Semester Project Jan. 2025 – May 2025
Technologies: Unity 6 DOTS, C#, Unity ECS Physics, Havok ECS Physics
https://sounides.itch.io/ball-to-the-wall

- Architected and implemented a fully destructible, voxel-based environment leveraging Unity 6's ECS and Burst Compiler for high-performance simulation.
- Designed core gameplay mechanics—including dynamic physics-driven voxel fragmentation and real-time debris management—using C# and Unity's Jobs System to maintain a consistent 120+ FPS on mid-range hardware.

TrackList: Social Music Review Platform Aug. 2024 – Dec. 2024
Technologies: React, Tailwind CSS, Vite, Firebase Firestore, Last.fm API
https://github.com/LawsonLay/CS3354TrackList

- Built a full-stack web application where users can search Last.fm's catalog, rate songs on a 5-star scale, view and comment on algorithm curated tracks and user posts.

- Architected end-to-end frontend using React and Tailwind and backend using Firestore and Node functions with environment-based configuration and secure API key handling.
- Set up a comprehensive test suite using Vitest and the React Testing Library and linting pipeline to enforce code quality.

Make Me a PC: Curated PC Building Website Jan. 2024 – Apr. 2024
Technologies: SQL, PHP, HTML/CSS, JavaScript
- Tasked to create a dynamic web application to help users choose computer parts based on personal needs and preferences, saving time spent manually curating parts.
- Used PHP to power the website's backend, handling user account creation, profile updates, and form submissions with proper input sanitation and data separation.
- Leveraged SQL to design and query a database of 1,000+ PC parts, generating optimized and fully compatible build recommendations within less than a second.

Neural Radiance Field Immersion Research Jan. 2023 – Jun. 2023
Technologies: Python, PyTorch, CUDA, COLMAP, Polycam
- Led a research team analyzing the performance of NeRF variants in immersive environments using 20+ datasets with varying capture methods.
- Processed data with COLMAP and Polycam and analyzed statistics using Nerfstudio.

Security Vulnerabilities in Open-Source Projects Aug. 2022 – Dec. 2022
Technologies: Linux, C, CPG
https://github.com/ACM-Research/finding-security-vulnerabilities
- Collaborated with a research team to scan open-source Linux programs for memory layout vulnerabilities using ERLKING, a CPG-based scanner.
- Investigated NULL pointer dereference and insecure function call vulnerabilities by analyzing both source code and compiled binaries.
- Validated points of interest (POIs) by manually reviewing source code to distinguish true vulnerabilities from false positives.

Determining Accident-prone Cars via Algorithmic Analysis Aug. 2022 – Dec. 2022
Technologies: Python, Jupyter Notebook, Numpy, Pandas
https://github.com/LawsonLay/ACM-Research-coding-challenge-22F
- Participated in a research-based coding challenge focused on analyzing a large dataset of vehicle information.
- Designed and implemented a custom accident-prone scoring algorithm using Python, pandas, and NumPy, and analyzed vehicle features into weighted categories based on correlations found in published accident statistics.
- Generated and visualized a ranked list of high-risk vehicles from the dataset in Jupyter Notebook.

Small Business Network Aug. 2021 – Dec. 2021
Technologies: Cisco IOS, Windows Server, Active Directory, VMware ESXi, DHCP, VLANs
- Deployed and secured a small business network using Cisco routers and switches with VLAN segmentation.

- Configured Windows Server roles including Active Directory Domain Services (AD DS), DNS, and DHCP to enable domain-based authentication and network services.
- Utilized VMware ESXi to provision and manage multiple Windows Server virtual machines, simulating an enterprise network environment.

WORK EXPERIENCE

Apple, Remote Feb. 2023 – Jun. 2023

Technical Solutions Analyst

- Resolved 30+ customer technical issues per day for iOS/macOS devices, achieving a 95% satisfaction rating.
- Diagnosed hardware/software failures, educated customers on best practices, and processed service repairs.