John R. Smith

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Education

University of Texas at Austin Austin, TX

Bachelor of Science in Computer Science *Aug. 2021 – May 2025*

- GPA: 3.5
- Relevant Coursework: Algorithms (Spring 2025), Machine Learning (Spring 2024), Operating Systems (Fall 2023), Computer Architecture (Spring 2023), Probability & Statistics (Fall 2022), Data Structures (Spring 2022), Discrete Mathematics (Spring 2022)

Projects

Media Sorting Application | *C, Linux API* December 2023

- Utility to index, analyze and relocate media files in a directory.
- Analyzed EXIF encodings in JPG files to extract relevant data to develop a heuristic for determining date and relevancy.

Command and Control Project | *C, Wireshark, Linux* November 2024

- Gained privileged remote access to a vulnerable Linux server by locating password through packet analysis and exploitation of strace command and insecure CRON job.
- Build an obscured remote shell server (backdoor) and client utility with encrypted traffic and fullly-privileged access. Used sockets to issue commands to a listening port and publish output to the user, fork/exec for process management, and the tiny-aes library for end-to-end encryption.

StormShelters | *ReactJS, Python, Flask, MySQL* September 2023 – December 2023

- Collaborated in a group of 5 to develop a full-stack web application that dynamically displayed relevant information from various APIs.
- Primarily responsible for developing front end search functionality (i.e. querying database using custom API and formatting/filtering results in site-wide search) as well as using Tableau for data visualization.
- Also contributed to database interface and design, configuring MySQL in AWS, writing Python scripts to query source APIs, and writing website architecture documentation.

Energy Efficient Computing | *Research* February 2024 – May 2024

- Wrote a literature review investigating the performance and energy utilization effects on various informed task scheduling algorithms.
- Detailed parallels in frequency-scaling and static/dynamic process analysis across homogeneous/heterogeneous architectures.)

Class Projects | *C, Java, Python, Scikit-Learn* January 2023 – May 2024

- Completed components of an academic ARM CPU emulator, including instruction pipelining, hazard correction, and a cache simulator.
- Built key components of an operating system, such as user program execution, system calls, a virtual memory system, and a file system.)
- Trained various classification models on government car-crash data to predict severity of an accident. Required extensive data cleaning and involved testing neural network, KNN, and other ML methods in Scikit-learn

Experience

New Scholar Academy June-July 2018, 2019 and 2021

South Texas ISD *Mercedes, TX*

- Worked as a student mentor to design activities intended to prepare incoming freshmen. Ensured students were familiar with the campus technology. Also worked one-on-one with students to help them develop a plan for high school achievement.

Technical Skills

Languages: C, C++, Python, Java, MySQL, JavaScript/TypeScript, HTML/CSS, PHP
Frameworks: React, NodeJS, Neo4j, MongoDB,
Developer Tools: Git, Docker, Amazon Web Services, Proxmox Virtualization (QEMU), Linux CLI
Libraries: pandas, NumPy, Matplotlib, Scikit-Learn