Matias Tejeda Astaburuaga

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EDUCATION

Purdue University   2019 - 2024
Bachelor of Science in Computer Science   GPA: 3.46/4

Relevant Coursework: Python Programming, Object-Oriented Programming, Discrete Mathematics, C Programming, Computer Architecture, Data Structures and Algorithms, Systems Programming, Compilers, Computer Security, Operating Systems, Computer Networks, Embedded Systems, Advanced Memory Allocation

PROJECTS

Fan Controller | *Python, Kotlin, XML*

- Designed and built an embedded system that reads inputs from a digital thermometer and controls a fan's speed accordingly using Pulse Width Modulation for real world dynamic cooling capabilities
- Developed an Android application in Kotlin and XML to implement Internet of Things functionality and wireless access to the fan controller using TCP/IP socket communication

Packet Analyzer | *C*

- Developed a packet analyzer for the Linux operating system that intercepts raw packets from the Network Interface Card and displays relevant information in real time
- Coverage includes each layer of the TCP/IP model such as Ethernet headers, ARP and IPv4 headers, and TCP, UDP, and ICMP headers

Java Compiler | *C, Lex, Yacc, ARM Assembly*

- Developed a compiler that dynamically generates executable ARM Assembly code for a subset of the Java programming language

Custom UNIX Shell | *C++, Lex, Yacc*

- Developed an UNIX shell that implements a terminal command line which parses and executes user input
- Input can include commands and their arguments, pipes for passing the output of one command as the input for the next, and I/O redirection for files
- Bonus features include handling environment variables, nesting a child shell within a parent shell, and expanding wildcards using regular expressions and recursion

Word Guessing Game | *Python*

- Developed a word guessing game featuring an interactive graphical user interface and animations

SKILLS

- **Programming:** HTML/CSS, JavaScript, Python, Java, C/C++, ARM/x86 Assembly
- **Libraries/Frameworks:** React, NodeJS, ExpressJS
- **Databases:** SQL, MongoDB
- **Tools:** Git, Linux, AWS, VSCode, Scrum/Agile, CI/CD
- **Languages:** Spanish, English, Japanese