

Natalia Wilson

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Education

Northeastern University, Boston, MA

B.S. in Computer Engineering, Minor in Criminal Justice, GPA 3.11

Expected May 2025

Extracurriculars: Society of Women Engineers (Fall 2021-present), Game Development Club (Fall 2023-present)

Engineering Projects by Course

Sudoku Puzzle Solver - *Fundamentals of Algorithms*

- Created a program in C++ that read Sudoku boards from a text file and used backtracking recursive functions to efficiently determine if the board was solvable and to solve it.

Command Line Capture The Flag - *Foundations of Cybersecurity*

- Successfully located six flags hidden in a vulnerable SQLite3 database by examining the C source code to investigate the program's command-line behavior and file system to be able to utilize inspection tools and SQL injection attacks.

ECG Circuit Assembly and Analysis - *Circuits and Signals: Biomedical Applications*

- Constructed an instrumentation amplifier circuit consisting of high and low pass filters to process an ECG signal in the analog domain to reduce noise and prepare it for analog to digital conversion, using the National Instruments DAQ device. The signal is analyzed using MATLAB for patient health analysis.

Skills

Programming Languages: Python, C++, SQL, Matlab, RISC-V, Java

Software: MYSQL, PSPICE, SOLIDWORKS, AutoCAD, Quartus Schematic, Linux, Xilinx Vivado, Creality, Wireshark

Electronics: Arduino, TUL PYNQ Z2 Board, basic circuit design, Intel DE1-SoC Board, digital multimeter, oscilloscope, function generator

Awards

- Dean's List Fall 2023