Jacob Shin

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Education

Temple University May 2024

- Bachelor of Science, Computer Science • Honors Program
- President's Scholar: Covers Full-Tuition ($20,000/yr) • Temple Science Scholar
- Courses: Introduction to Academic Computer Science, Mathematical Concepts in Computing I Honors

Experience

Princeton Plasma Physics Laboratory (PPPL) Intern October 2019 - December 2019

- Learned to design an electronic circuit for a device called a Langmuir probe, an instrument used to measure properties like density and temperature of plasmas

Projects

College Rejection Simulator (HTML, CSS, Javascript, Bootstrap, Netlify)

- Created a college rejection simulator with fake decision letters and college login portals to help high school seniors mentally prepare for their rejection
- Received 20,000 views within the first few days of the release

COVID Data Web Scraper and Discord Bot (Python, Flask, SQLite, Rust, Highcharts.js, Heroku)

- While the official university website only displayed weekly and daily statistics and then promptly deleted the data for the past days, this project stored the case data for every day and compiled it into graphs and charts to show case progression over time
- Discord Bot written in Rust scraped unofficial website (this project) to provide close to real time COVID data in university Discord servers

TI-Authenticator: 2FA With a Calculator (C, HMAC, SHA1, OTP)

- Provided rolling passcodes similar to Google Authenticator except on a graphing calculator
- Implemented One-Time Password (OTP) algorithms for the TI-84+ CE graphing calculator based on RFC 4226 (HOTP) and RFC 6238 (TOTP)

Calculator Controlled RC Boat (C++, TI-BASIC, Arduino)

- Allowed a graphing calculator to wirelessly control a boat
- Utilized an Arduino and RF wireless modules with a C++ library called ArTICL to interface with a TI-84+ graphing calculator

Skills

Programming Languages: C, C++, Python/Flask, Javascript, x86 ASM
Markup Languages: LaTeX, Markdown, HTML, CSS
Other: Linux, Bash, Git/Github, Tmux, (Neo)vim, Arduino, REST APIs, Ghidra, GDB, Binary Exploitation, Basic Reverse Engineering

Awards/Activities

CTF (Capture the Flag Computer Security Competitions):

- 1st at castorsCTF20 • 2nd at OwlHacks RSM CTF • 4th at MetaCTF 2020 • 4th at RACTF 2020
- 25th at PicoCTF 2019 • 35th at TJCTF 2019 • 13th at MITRECTF 2019

Member: Temple Association for Computing Machinery (ACM)