

# Jacob Shin

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## Education

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**Temple University (College of Science and Technology)**

Expected to Graduate 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

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**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

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

- Provides rolling passcodes similar to Google Authenticator except on a graphing calculator
- Implements 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)

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

**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, BeautifulSoup, Flask, SQLite, Rust, Javascript)

- Scraped COVID data from my university's website in order to provide more thorough and detailed statistics about COVID on the campus than the official website by displaying data using Highcharts.js
- Discord Bot scrapes website to provide close to real time COVID data with Rust

## Skills

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**Programming Languages:** C, C++, Python/Flask, Javascript, x86 ASM

**Markup Languages:** L<sup>A</sup>T<sub>E</sub>X, Markdown, HTML, CSS

**Other:** Linux, Bash, Git/Github, Tmux, (Neo)vim, Arduino, REST APIs, Ghidra, GDB, Binary Exploitation, Basic Reverse Engineering

## Awards/Activities

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**1st Place:** castorsCTF20 Computer Security Competition

**4th Place:** RACTF 2020 Computer Security Competition

**Member:** Temple Association for Computing Machinery (ACM)