

GABRIEL CRUZ

Computer Science Undergraduate

📍 Brest, France

@ gabriel.melo.cruz@usp.br

🐙 github.com/gmelodie

🌐 gmcruz.me

in /in/gabriel-de-melo-cruz/

EXPERIENCE

Computer Science Undergraduate

University of São Paulo

📅 Dec 2020 (expected)

📍 São Carlos, Brazil

Computer Networking Group Leader

Ganesh Security

📅 Jan 2019 – Jun 2020

📍 São Carlos, Brazil

- Led the computer networking security research division in the extracurricular group [Ganesh](#)
- Developed several Capture The Flag (CTF) challenges for the freshmen selection process regarding computer networks (protocols, wifi, handshakes, etc.)
- [Organized and developed several talks](#), including topics such as DDoS attacks using botnets and infected machines; MITM attacks with Bettercap, IP spoofing and phishing techniques (HSTS hijacking and website cloning)
- [Gave a course](#) on DoS and DDoS attacks for the most popular computer science undergraduate event of the country (Semcomp). Covered amplification techniques, botnets, peer-to-peer networks overall architecture, TCP and UDP flooding, etc.

Network Security Researcher

University of São Paulo

📅 Nov 2018 – Jun 2019

📍 São Carlos, Brazil

- Exploited and measured the results of two DoS attacks in MQTT-based networks: SYN Flood and Sybil Subscription Flood
- Used the tool hping3 from Offensive Security to perform a SYN Flood attack leveraging a known failure in TCP's three-way handshake process, showing that, as MQTT networks are mostly TCP-based, it is imperative to be careful with underlying technology flaws when developing software
- Used Python to implement the Sybil Subscription Flood attack, which creates several sybil (or fake) MQTT clients and publishes dummy messages to these clients, overloading the broker with the fake nodes
- Wrote a [monography](#) about the results obtained

France Exchange Program

Université de Bretagne Occidentale

📅 Jan 2020 – Jun 2020

📍 Brest, France

- Worked as a guest researcher in the topic of Social Engineering attacks
- Attended classes on intermediate and advanced French language (B2 and B2+)
- Was part of the LGBTQ+ student association West-Up and the computer science student association Obi 1. Helped organizing and attended several LGBTQ+ visibility events as well as programming events and CTFs

SKILLS

Programming languages: C/C++, Python, Go, Java, Javascript, Elixir

Tools: Unix/Linux, Git, NumPy, Vim/Neovim, Wireshark, Burp Suite

Other skills: LaTeX, HTML, Technical Writing, Teaching

Languages: Portuguese (Native), English (TOEFL IBT 107/120), French (DELFI B2)

PROJECTS

IPv6 Course

- Taught a crash course on IPv6 technologies for the students and professors of the University of São Paulo
- Developed realistic scenarios and promoted practical exercises to reinforce the learning process
- Wrote a summary of the topics developed more in depth throughout the course for later studies [available here \(Portuguese\)](#)

Web Development Course

- Wrote a series of posts on Medium about web development, going through what the web is, how Hypertext, HTML and HTTP work together, implemented a local web server and showed how databases, JavaScript and CSS integrate in web pages and web servers
- Documented my own learning process in order to show how to approach problems when working independently
- [Posts available here \(English\)](#)

VOLUNTEER WORK

Hackathon Monitor for Children

Happy Code

📅 Jun 2019

📍 São Carlos, Brazil

- Worked as a volunteer monitor in a hackathon sponsored by Happy Code, a school that teaches coding for children
- Guided the kids through the process of developing a mobile app: brainstorming, paper designing, usability tuning, and finally developing an elevator pitch

University Visit Monitor

University of São Paulo

📅 Apr 2019

📍 São Carlos, Brazil

- Worked as a volunteer monitor in university visits for high school students
- Answered questions about student life and the difference between courses available in the campus