El Hajj Chehade, Saiid

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Education

EPFL   *Lausanne, Switzerland*

PhD in Computer Science   *Sept. 2023 - Present*

- Security and Privacy Field. Specializing in Web and Browser Privacy and Security.
- EDIC Fellowship Recipient.
- **Advisor:** Prof. Carmela Troncoso.
- **Relevant Courses:** Advanced Machine Learning and Advanced Topics in Privacy Preserving Technologies.

American University of Beirut   *Beirut, Lebanon*

B.E. in Computer and Communication Engineering   *Aug. 2019 - June. 2023*

- Minor in applied mathematics.
- Graduated With High-Distinction. Cumulative GPA **4.23**.
- **Relevant Courses:** Database Design, Advanced data-structures, Algorithms, Statistics, Cryptography, Machine Learning, Networking, Network Security, GPU programming, Deep Neural Networks, Information Theory.
- **Awards:** Dean's Honor List (All semesters), Merit Scholarship (I ranked **3rd** in the Lebanese national secondary education exams).

College Universel   *Chehim, Lebanon*

High School   *Apr 2016 - May 2019*

- Passed with High Distinction: 19.03/20 nationally and 3rd rank in Official Exams.
- Awarded scholarship from the Lebanese Prime Minister.

Experience

Research Assistant   *Lausanne, Switzerland*

SPRING Lab - EPFL   *Sept. 2023 - Present.*

- Working on the intersection between web-measurement, web-privacy and browsers.

Lead Developer (Full Stack)   *Beirut, Lebanon*

Test Prep Institute   *May. 2022 - Sept. 2023*

- Managed team of 3 to build an online educational platform. Helped company implement automated tests and decrease student processing time by 70%.
- Helped design an architecture spanning a secure student assessment environment, adaptive questions based on performance, classroom database system, user access control and live tracking exam statistics. These features allowed the CEO to expand to a larger market of institutions in Lebanon.
- Managed *Git* repository and Deployment on *Heroku* for *Django* Build with embedded *React* frontend through ıWebpack. This helped get 98% up-time on the server.
- Lead strategy development by setting task priorities, and timelines. This helped deploy the initial version in one month.
- Got offer to stay for equity to create the IT department.

Research Assistant   *Beirut, Lebanon*

American University of Beirut   *Sept. 2022 - Jan. 2023*

- Worked alongside Prof. Ibrahim Issa on the problem of "Fairness in Machine Learning".
- Formulated the problem statement and the direction of the project.
- Compiled literature review to have an understanding of the research domain standing.
- Prepared a report detailing the taxonomy, directions, and a new definition for Fairness.
- **Academic areas:** Differential privacy, statistics & machine learning, linear algebra, optimization.

Research Intern   *Lausanne, Switzerland*

SPRING Lab EPFL   *Jun. 2022 - Aug. 2022*

- Presented a differential DOM tree comparison algorithm and redefined web-breakage problem definition that paved the way for a promising paper endorsed by the lab advisor Prof. Carmela Troncoso.
- Built a pipeline to classify web-page breakages to increase the usability of Ad-blockers: Feature selection, and random-forests.
- Designed crawl experiments and evaluated model. I achieved comparable accuracy to state-of-the-art techniques.
- Published a USENIX Artifact for WebGraph: Smart Ad classifier under supervision of Dr. Sandra Siby.
- Published the first online Ad-block enabled web crawling tool that was recognized by my supervisor. *GitHub: Saiid2001/OpenWPM.*
- Created GitHub Crawlers to automate the ab-lock history tracking in Python.
- **Technical skills:** python, OpenWPM, sklearn, multiprocessing, sqlite, linux, Git.
- **Academic areas:** Web-crawling, machine learning, networking.

Block-chain Developer Part-time
Remote, UAE

NiftyCraft
Jan. 2022 - Aug. 2022

- Published a smart-contract for NFT tokens for in-game usage.
- Researched and Integrated NFT authentication for exclusive content serving for token holders. Deployed and running in production.
- **Technical skills:** Solidity, reactJs, Git.
- **Academic areas:** cryptography

Research Assistant
Beirut, Lebanon

American University of Beirut
Sep. 2020 - Dec. 2021

- Led a Human Centered Design (HCD) research project with Prof. Hazem Hajj to solve students' social needs in online education.
- Developed a full virtual campus platform on ElectronJS/Flask in the span of 1 year.
- Created a mesh topography conference interface using WEBrtc for up to 6 users.
- Scraped University website for courses information using Python.
- **Technical skills:** WebRTC, ReactJs, javascript, flask, python, docker, Git.
- **Academic areas:** human-centered design, communication, psychology

Full-stack Developer
Beirut, Lebanon

Sila.Ai Startup
Sep. 2020 - Mar. 2021

- Coded Python algorithms to parse time series data on online exam platform.
- Visualized student activity and predicted malicious activity from time-data.
- Developed online exam platform (Frontend JavaScript, HTML, CSS) and backend with Docker, Flask and MongoDB.

Publications

El Hajj Chehade, S., Siby, S., & Troncoso, C. (2024). Sinbad: Saliency-informed detection of breakage caused by ad blocking. *IEEE Security & Privacy*.

 github.com/spring-epfl/sinbad paper.com

Projects and Competitions

Test Prep Institute Online Platform
Lausanne, Switzerland

EPFL
August. 2022 - Present.

www.testprepinstitute.com

Final Year Project: Decentralized Private Polling Application in Lebanon for Sensitive Political and Societal Applications
Beirut, Lebanon

American University of Beirut
May. 2023

- Leading a team of 4 to create a deployment-ready system for Lebanese population.
- Using Threshold Homomorphic-encryption for tallying the polls.
- Designing and implementing an expandable semi-centralized structure of server nodes to share authority.
- Using touch-biometric for continuous passive user authenticity and uniqueness: it will help maintain a no-login non-intrusive design.
- Designing and implementing a donation blockchain system to reward poll participants (through a lottery) to increase incentive.
- Summarized 15 papers on the subject, and wrote a 50 page midterm report.

Course Projects
Beirut, Lebanon

American University of Beirut

- DeepDeepBlogger: T5 Pipeline to transform Academic Papers in Deep Learning to Informal Blogs — May. 2023
- NMAP attack classifier. *(Bash, Python, sci-kit learn, tensorflow)* — Dec. 2022
- GPU Sparse-matrix Sparse-matrix multiplication *(CUDA, C)* — Dec. 2022
- sEMG to Hand movement MIMO System Identification (A+) — May. 2022
- Relational Database to connect students with alumni for internships (A+) — May. 2022
- Clustering Students Based on Joint Course Selection Behavior (A) — Dec. 2021
- AES-Encryption educational tool (A+) — Dec. 2021
- FTP Server/Client Low-level Implementation UDP/TCP (A+) — May. 2021

IEEE/Robotics Club Hackathon
Beirut, Lebanon

American University of Beirut
Nov. 2018

- Implemented a garbage collection robot using a raspberry Pi, Pi cam, python OpenCV, Arduino servo and motor control.

Teaching

Fall '23   **COM-301,** Teacher Assistant for Introduction to Computer Security   *EPFL, Switzerland*

Suprivised Students

Spring '24 **Semester Project**, Julien Mettler, Systematic evaluation of logged-in cookie sensitivity *EPFL, Switzerland*
Spring '24 **Semester Project**, Jonas Gloning, Evaluating the privacy impact of Chrome V3 on web extensions *EPFL, Switzerland*

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Skills

Programming	Python (Pandas, Tensorflow, NumPy, Scikit-learn, Spacy, etc.), C/C++, HTML/CSS, JavaScript, SQL, Java, Matlab, Cuda, Django
Miscellaneous	Linux, Shell (Bash), LaTeX(Overleaf/R Markdown), React, Unity, Figma, Docker, Git.
Soft Skills	Hands-on learning, Resourcefulness, Academic writing, Creative mindset, Timeline management, concise presentation.

Certificates

Datacamp	Image Processing with Keras in Python	Supervised Learning with Scikit-Learn	Unsupervised Learning in Python	Machine Learning with Tree-based Models
Coursera	Neural Networks and Deep learning	Introduction to TensorFlow for ML

Languages

English	Professional proficiency	IELTS 8.5
French	Bilingual Proficiency	Delf-B2
Arabic	Native Proficiency	

Achievements

2023	**Travel Grant**, Privacy-Enhancing Technologies Symposium (PETS)	*Switzerland*
2023	**Fellowship**, Summer Research Institute	*Switzerland*
2023	**EDIC Fellowship**, School of Computer Science, EPFL	*Switzerland*
2019-2023	**Dean's Honor List**, American University of Beirut	*Lebanon*

Outreach

Linux Workshop   *Beirut, Lebanon*

Robotics Club, American University of Beirut   *Nov. 2022*

- Volunteered with the Robotics Club at AUB to deliver an introductory Linux workshop.
- Presented in front of 50 students. They demanded a second one to be given soon.

Kids Robotics Workshop   *Chehim, Lebanon*

Independent Initiative

- Organized local robotics training course for 20 children. I motivated student interest for robotics and computer related fields of study.
- Prepared curriculum, book, and presentations for the course.

First-Aid training   *Chehim, Lebanon*

"Popular Rescue" local organization   *Jul. 2018*