Paul Flammarion

paul-flammarion | paul.flammarion.eu | paul.f@uci.edu

Education

2025 - 2030	Ph.D. Computer Science in Networking and Security	(UC Irvine, USA)
2022 - 2025	Engineering Master's Degree in Digital Security and Networks	(ISEP, France)
Oct. 2024 - Sept. 2025	*Exchange - Visiting Student in Computer Science*	*(Stanford, USA)*
Feb. 2022 - Jun. 2022	*Exchange - Bachelor of Natural Sciences in Computer Science*	*(TSI, Latvia)*
2020 - 2022	International Higher School Preparatory Classes	(ISEP, France)

Research Experience

Ph.D. Student - Co-advised by Professor Gene Tsudik and Professor Paul Pearce — Sept. 2025 - Jun. 2030

University of California, Irvine
Security and Privacy Research OUTfit (SPROUT)
Working on Internet and protocols security for a better understanding of real-world deployments.

Visiting Student Researcher - Advised by Professor Zakir Durumeric — Oct. 2024 - Sept. 2025

Stanford University
Empirical Security Research Group (ESRG)
Worked on "Hop", a new transport and remote access protocol that addresses SSH's current limitations.
Developed several modules with state-of-the-art security and practices. Extensive literature review and writing.

Student Researcher - Advised by Professor Lionel Trojman — Feb. 2024 - Jul. 2024

Paris Institute of Digital Technology (ISEP)
Computer Science, Signal and Image, Electronics and Telecommunications Laboratory (LISITE)
Built and evaluated new Physical Unclonable Functions architecture to improve FPGA cryptography security.
Implemented novel configurable paths using XOR in a row orientation for improving key' stability over FPGAs.

Research Intern - Advised by Professor Rolf Drechsler — Sept. 2023 - Jan. 2024

German Research Center for Artificial Intelligence (DFKI)
Cyber-Physical Systems Department
Developed "Auto-OPS" an Optical Probing simulation framework for chip security against Side-Channel.
Led follow-on research and experiments to demonstrate a countermeasure against Optical Probing attacks.

Publications

Hop: A Modern Transport and Remote Access Protocol - 2025

Authors: *P. Flammarion*, G. Hosono, W. Nguyen, L. Bauman, D. Rebelsky, G. Wan, D. Adrian, Z. Durumeric.
Accepted: *USENIX Security Symposium, August 2026.*

Auto-OPS: A Framework For Automated Optical Probing Simulation on GDS-II - 2025

Authors: *P. Flammarion*, S. Parvin, F. Sill Torres, R. Drechsler.
Published: *7th International Workshop on Secure Hardware, Architectures, and Software*, Barcelona, Spain in collaboration with *IEEE Embedded Systems Letters Journal.*
→ **Best Paper Award**

Generative AI: Between promises and vulnerabilities - 2024

Authors: S. Sifaoui, *P. Flammarion*, T. Wemaere, Q. Torroba, C. Rolland.
Published: *Cultur'IA*, Minister of the Interior and Overseas France.

Poster

Design of Novel Physical Unclonable Function for Hardware Security Applications - 2024

Authors: *P. Flammarion*, K. Vicuña Barriga, and L. Trojman.
Presented: *3rd Edition of Scientific Day, ISEP IEEE*, Paris.
→ **Best Student Poster Award**

Hackathons

Winner - GenAi Hackathon 2024

Issued by French Gendarmerie Nationale, Europol, Magic Lemp, Linagora
Subject: Bypass/break the safeguards of 3 open-source LLMs (LLama3-8B, Falcon2-11B, Mistral-7B).
Team: *P. Flammarion*, S. Sifaoui, T. Wemaere, Q. Torroba, C. Rolland.

Winner - FrHack Hackathon 2024

Issued by Agence Nationale des Fréquences (ANFR)
Subject: Secure the route of the Olympic Flame in terms of radio coverage conducting data analysis.
Team: *P. Flammarion*, T. Wemaere, B. Prévost, M. Prévost.

Winner - IEEE ISEP France Section Hackathon 2023

Issued by Isep IEEE Student Branch at the 2nd edition of Scientific Day
Subject: Algorithm optimization based on Google Hash Code - Melbourne University challenge.
Team: *P. Flammarion*, H. Yoo, A. Joseph-Antoine.

Jury prize - Green Code Hackathon 2022

Issued by 3DS Outscale, Sagemcom and Junior ISEP
Subject: Enhance the code's cleanliness and sustainability of an IT architecture with 3 server instances.
Team: *P. Flammarion*, T. Wemaere, H. Yoo, B. Maupas, L. Mayet, C. Rodallec.

Work & Leadership Experience

Protection Civile Paris Seine - volunteering 2021 - 2026

District's webmaster & manager
First aid worker, "Head of Infirmary" up to 11 persons, ambulance driver, and social and solidarity rescuer.
Trainer in life-saving procedures. Active participation in the Olympics 2024. Total commitment 1200 hours.

Freelance - 7 distinct clients 2021 - 2024

Linux server maintenance: Ubuntu, Proxmox.
Full-stack web development for small businesses.
Handling maintenance tickets (PHP, JavaScript, SQL, Git, SSH, UX/UI).

Hobby & Projects

PFLAMMARION

Pen-testing on root-me.org/pflammarion 2021 - 2024

Top 1.2% of 300,000 players
132 challenges completed on various topics: network, web server/client, scripting, and steganography.
Two innovative challenge solutions, one of which became the platform's most-voted solution.

iOS Urgent Notifier (Swift) apps.apple.com 2023 - 2024

Improve chain of emergency rescue operations systems for safety in Greater Paris Area, France
Combined with a dashboard to quickly mobilize rescuers during life-threatening emergencies.
Independently maintained this infrastructure, regularly deploying updates to ensure its reliability and security.

Securing UAV Against Communication Links Attacks github.com/uav-security 2024

Short paper - Group project for Network Security class
Unmanned Aerial Vehicles simulation with QGroundControl and ArduPilot and attacks with Pymavlink.
Extensive literature review. Deep analysis of MAVLink frames structure. Paper writing. Oral presentation.

Sensor monitoring dashboard (PHP, C++, Web) github.com/app-cow 2022-2023

Leading group project prototyping an embedded system for health
Sensor-based real-time management web dashboard with data visualization, alerting, and user permissions.
Designed and integrated the TIVA-based hardware. Live data transmission from seven sensors using Bluetooth.

Skills

Network Security - Hardware Security - Cryptography
Python - GoLang - C++ - Java - Kotlin - Swift - PHP - TypeScript - JavaScript - MATLAB - LaTeX- Git