Gwendal Patat

Research Associate

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Research Interests

Static Analysis
Cryptographic Implementations
Digital Right Management
Smartphone Security & Privacy

Honors & Awards

2024	**Foundation University of Rennes**, 2nd Prize Best Thesis Award
2023	**Mozilla Fundation**, Bug Bounty Hall of Fame
2021	**Netflix, Inc.**, BugHunter Hall of Fame
2021	**Google LLC**, Vulnerability Research Program Hall of Fame & Honorable Mentions

Work Experience

2024–now   **Research Associate**, *SSE Department*, Fraunhofer SIT, Darmstadt, Germany

2020–2023   **Ph.D. Thesis in CyberSecurity**, *Bust the Trust: Dissect and Analyze the Security and Privacy Impacts of the Widevine DRM*, Univ Rennes, CNRS, IRISA, Rennes, France
Supervised by Pierre-Alain Fouque, and Mohamed Sabt.

2020   **Research Intern**, *EMSEC Team*, IRISA, Rennes, France
Research intern at the Institut de Recherche en Informatique et Sytèmes Aléatoires (IRISA) in the Embedded Security team under the supervision of Mohamed Sabt. Analysis and exploitation of cryptographic implementations within the ARM TrustZone.

2019   **Research Intern**, *EMSEC Team*, IRISA, Rennes, France
Research intern at the Institut de Recherche en Informatique et Sytèmes Aléatoires (IRISA) in the Embedded Security team under the supervision of Mohamed Sabt. Research on the U2F protocol and its security implementations in the wild.

2018   **Research Intern**, *STORM Team*, IRIT, Toulouse, France
Research intern at the Intitut de Recherche en Informatique de Toulouse (IRIT) in the Structural Models and Tools in Computer Graphics (STORM) team, under the direction of Mathias Paulin. Implementation of a visual light path analysis tool.

Education

2020–2023 **Ph.D. in CyberSecurity**, Université de Rennes, Rennes, France

2018–2020 **Master's Degree in CyberSecurity**, Université de Rennes 1, Rennes, France

2015–2018 **Bachelor's Degree of Computer Science**, Université Toulouse III Paul Sabatier, Toulouse, France

Publications

o **Formal Security Analysis of Widevine through the W3C EME Standard**, Stephanie Delaune, Joseph Lallemand, Gwendal Patat, Florian Roudot, and Mohamed Sabt, *33rd USENIX Security Symposium, USENIX Security 2024, Philadelphia, PA, USA, August 14-16 2024.*

o **Your DRM Can Watch You Too: Exploring the Privacy Implications of Browsers (mis)Implementations of Widevine EME**, Gwendal Patat, Mohamed Sabt, and Pierre-Alain Fouque, *23rd Privacy Enhancing Technologies Symposium, PETS'23*, Lausanne, Switzerland, 2023.

o **WideLeak: How Over-The-Top Platform Fail in Android**, Gwendal Patat, Mohamed Sabt, and Pierre-Alain Fouque, *52nd Annual IEEE/IFIP International Conference on Dependable Systems and Networks, DSN'22*, Baltimore, Maryland, United States, 2022.

o **Exploring Widevine for Fun and Profit**, Gwendal Patat, Mohamed Sabt, and Pierre-Alain Fouque, *16th IEEE Workshop on Offensive Technologies, WOOT'22*, San Francisco, California, United States, 2022.

o **Please Remember Me: Security Analysis of U2F Remember Me Implementations in The Wild**, Gwendal Patat and Mohamed Sabt, *Symposium sur la sécurité des technologies de l'information et des communications, SSTIC'20*, Rennes, France, 2020.

Talks

o **"Formal Analysis of Widevine"**, *USENIX Security'24*, Philadelphia, Pensylvania, United States, 2024.

o **"The Opaque Madness"**, *Hasso-Plattner-Institut*, Potsdam, Germany, 2023.

o **"Your DRM Can Watch You Too"**, *PETS'23*, Lausanne, Switzerland, 2023.

o **"Widevine in the Wild"**, *Sony Entertainment*, Online, 2022.

o **"WideLeak: How Over-The-Top Platform Fail in Android"**, *DSN'22*, Baltimore, Maryland, United States, 2022.

- ○ **"Exploring Widevine for Fun and Profit"**, *WOOT'22*, San Francisco, CA, USA, 2022.

- ○ **"Breaking Widevine because we can"**, *Quarkslab*, Rennes, France, 2022.

- ○ **"Alice et la Reine Rouge: Pourquoi faut t-il courir pour se protéger numériquement ?"**, Gwendal Patat and Diane Leblanc-Albarel, *Festival Pint Of Science 2022*, Rennes, France, 2022.

- ○ **"Si c'est caché, c'est sécurisé, non ? Ou comment contrarier les services de streaming"**, *BreizhCTF 2022*, Rennes, France, 2022.

- ○ **"Please Remember Me: Security Analysis of U2F Remember Me Implementations in The Wild"**, *Symposium sur la sécurité des technologies de l'information et des communications, SSTIC'20*, Rennes, France, 2020.

Trainings & Competitions

2021 **Rencontre Entreprises DOCtorants (REDOCS)**, *Study on the security and privacy impact of IoT devices for the Commission Nationale de l'Informatique et des Libertés (CNIL), CIRM, Marseille, France*

2021 **CYBER IN Toulouse**, *Summer School on Security for IoT and embedded Criticial Systems, GDR Sécurité Informatique, Toulouse, France*

2020 **Winner of the Break The Code CTF**, *Rennes, France*

2019 **Finalist of the European Cyber Week 2019 Student Challenge**, *ECW'19, Rennes, France*

2017 **Artificial Intelligence Summer School**, *Centre International de Mathématiques et Informatique de Toulouse (CIMI), Toulouse, France*

Responsabilities

2020–2023 **Commitee Member**, Doctoral Students Representative in the IRISA's Moral and Sexual Harassment Awareness Commission, IRISA, Rennes, France

2021–2022 **Team Seminar Co-Organizer**, Organizer of the SPICY team seminar, IRISA, Rennes, France

Teaching Experiences

2022–2023 **Lab Assistant & Project Supervisor**, Université Rennes 1, Rennes, France
- ○ **Software Security** Master level course.
- ○ **Research Project** Master level course.
- ○ **Low-Level Programming** Master level course.
- ○ **Introduction to Databases and Structured Data** Bachelor level course.

2021–2022 **Lab Assistant**, Université Rennes 1, Rennes, France
- ○ **Software Security** Master level course.
- ○ **Low-Level Programming** Master level course.

2020–2021 **Lab Assistant**, Université Rennes 1, Rennes, France
- **Software Security** Master level course.
- **System Security** Master level course.
- **Network Security** Master level course.