Dr.-Ing. Aurore Fass

Visiting Assistant Professor at Stanford
Research Group Leader at CISPA

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Bio

Aurore Fass is a Visiting Assistant Professor of Computer Science at Stanford University. Her research broadly focusses on **Web security and privacy**, **Web measurements**, and **machine learning**. Specifically, she is interested in detecting malware & vulnerabilities on the Web and collecting data to better understand and improve user security and privacy.

Scientific Career

2021–2023 **Visiting Assistant Professor**, *Stanford University*, U.S.

2021–2023 **Research Group Leader**, *CISPA Helmholtz Center for Information Security*, Germany.

2020–2021 **Postdoctoral Researcher**, *CISPA Helmholtz Center for Information Security*, Germany.

2017–2020 **Ph.D. Student**, *Saarland University & CISPA Helmholtz Center for Information Security*, Germany.

- Ph.D. thesis: *Studying JavaScript Security Through Static Analysis*
- Advisors: Michael Backes and Ben Stock

Education

2014–2017 **Grande École** (similar to a Master Degree), *TELECOM Nancy*, France, valedictorian.
Major: Telecommunication, Network, and Security

- Master thesis: German Federal Office for Information Security (BSI), Germany
  Automated clustering of JS samples for the detection of malware contained in obfuscated code
- Industrial project: French Ministry of Defense, France
  Implemented an Xposed module to monitor Android devices; group of 4 persons (6 months)
- Internship: Fraunhofer IOSB, Germany
  Implemented a passive asset detection system (8 weeks)

2012–2014 **Preparation for the highly competitive nationwide entrance examination to the French Grandes Écoles**, France.
Major: Mathematics, Physics, and Computer Science

2012 **High School Graduation**, France, graduated with distinction (mention très bien), European section.
Major: Mathematics, Physics & Chemistry, Biology, and German

Awards and Honors

2021 **Inspiring Career**, *French Grande École TELECOM Nancy*, Remote.

2019–2022 **Saarland University Program of Excellence**, Germany.

2017 **Valedictorian**, *French Grande École TELECOM Nancy*, France.

2016 **IBM Best Student Recognition Event**, UK.

Publications

Aurore Fass, Dolière Francis Somé, Michael Backes, and Ben Stock. DoubleX: Statically Detecting Vulnerable Data Flows in Browser Extensions at Scale. In *ACM CCS*, 2021.

Marvin Moog, Markus Demmel, Michael Backes, and **Aurore Fass**. Statically Detecting JavaScript Obfuscation and Minification Techniques in the Wild. In *Dependable Systems and Networks (DSN)*, 2021.

Aurore Fass, Michael Backes, and Ben Stock. HideNoSeek: Camouflaging Malicious JavaScript in Benign ASTs. In *ACM CCS*, 2019.

Aurore Fass, Michael Backes, and Ben Stock. JStap: A Static Pre-Filter for Malicious JavaScript Detection. In *ACSAC*, 2019.

Aurore Fass, Robert P. Krawczyk, Michael Backes, and Ben Stock. JaSt: Fully Syntactic Detection of Malicious (Obfuscated) JavaScript. In *DIMVA*, 2018.

Community Services

PC Member S&P 2023, ACM CCS 2022, ARES 2022, TheWebConf 2022, SecWeb 2022, ACM CCS 2021, SecWeb 2021

Artifact Committee USENIX Security 2021, ACSAC 2018

External Reviewer NDSS 2022, USENIX Security 2022, USENIX Security 2021, NDSS 2021, USENIX Security 2020, NDSS 2020, ACSAC 2019, Euro S&P 2019, ACSAC 2018, ACM CCS 2018

Hiring Committee CISPA faculty hiring committee 2020

Selected Talks

Studying JavaScript Security Through Static Analysis: Detection of Malicious and Vulnerable Code

Mar 2022 Palo Alto Networks (CA, U.S.). Remote.

DoubleX: Statically Analyzing Browser Extensions at Scale

Nov 2021 Stanford Security Lunch. Stanford, CA, U.S.

Studying JavaScript Security Through Static Analysis

Jun 2021 Spirals Webinar at Inria Lille (France). Remote.

Statically Analyzing Malicious JavaScript in the Wild

Mar 2021 Webinar at LORIA (France). Remote.

Dec 2020 BINSEC Webinar at CEA (France). Remote.

HideNoSeek: Camouflaging Malicious JavaScript in Benign ASTs

May 2020 RuhrSec. Remote.

Mar 2019 Grande Region Security and Reliability Day (GRSRD). Nancy, France.

Feb 2019 MADWeb. San Diego, CA, U.S.

JaSt: Fully Syntactic Detection of Malicious (Obfuscated) JavaScript

Nov 2018 Blackhoodie. Berlin, Germany.

Jun 2018 Malware Meeting at LORIA. Nancy, France.

Mar 2018 Grande Region Security and Reliability Day (GRSRD). Saarbrücken, Germany.

Publicly Available Software

DoubleX Static browser extension analyzer: detection of suspicious external data flows

HideNoSeek Static analyzer to detect syntactic clones in JavaScript inputs

JStap Static and modular malicious JavaScript detector

JaSt Static malicious JavaScript detector

Teaching

Courses

2021 **Temporary Lecturer at TELECOM Nancy** (Université de Lorraine, France)

- Browser Extensions: Architecture and Security Consideration (lectures and practicals for master students)

WS 2019–2020 **Seminar: Joint Advances in Web Security**

- Browser Extensions: Security and Vulnerabilities
- Overview of Malicious JavaScript Detection Techniques and Attacks

WS 2018–2019 **Seminar: Joint Advances in Web Security**

- Overview of Malicious JavaScript Detection Techniques
- Cryptojacking: Definition, Detection, and Dimensions

Student Supervision

WS 2021–today **Ph.D. Student Mentoring & Co-Supervision**

- Ongoing (4 Ph.D. students)

WS 2021–today **Student Projects**

- Ongoing (2 bachelor students and 1 master student)

Spring 2021 **Bachelor Thesis Co-Supervision**

- A Study of State-of-the-Art Call Graph Creation Approaches for JavaScript

SS 2020 **Research Assistant Supervision**

- Browser Extensions: Security and Vulnerabilities (2 bachelor students, co-supervised)
- Overview and Analysis of JavaScript Obfuscation Techniques (2 bachelor students)

WS 2019–2020 **CySec Projects**

- Overview and Analysis of JavaScript Obfuscation Techniques (2 bachelor students)
- Intelligent Fuzzing System for JavaScript (2 bachelor students)

2018 **Research Assistant Supervision**

- In-Depth Analysis of JavaScript Obfuscation Techniques and Deobfuscation (1 bachelor student)
- Lexical Malicious JavaScript Detection System (1 bachelor student)

Additional Skills – Languages

French	Mother tongue	
English	Trilingual proficiency	*TOEIC score: 910 (2014); living in the U.S. since 2021*
German	Trilingual proficiency	*C1 Certificate (2016); lived in Germany 2017–2021*