

# Dr.-Ing. Aurore Fass

Visiting Assistant Professor at Stanford  
Research Group Leader at CISP

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## Bio

Aurore Fass is a Visiting Assistant Professor of Computer Science at Stanford University. Her research broadly focuses 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

- 2022 **PC members – Honorable mentions**, *TheWebConf*.
- 2021 **Inspiring Career**, *French Grande Ecole 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.

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## 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.

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## 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

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## Selected Talks

### [DoubleX: Statically Analyzing Browser Extensions at Scale](#)

July 2022 Berkeley Security Seminar. Berkeley, CA, U.S.

May 2022 RuhrSec. Bochum, Germany.

Apr 2022 Stanford Computer Forum – Security Workshop. Stanford, CA, U.S.

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

### [Studying JavaScript Security Through Static Analysis](#)

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

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.

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## 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](#)

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## 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

### Ph.D. Student Mentoring & Supervision

From Fall 2021 Shubham Agarwal – Browser Extension Security

From Fall 2021 Kimberly Ruth – Web Measurement – with Zakir Durumeric

Winter 2021 Liz Izhikevich – Internet Scanning – with Zakir Durumeric

Fall 2021 Liana Patel – Web Crawler – with Zakir Durumeric

### Master Student Mentoring & Supervision

Winter 2021 Fengchen Gong – Browser Fingerprinting

### Bachelor Student Mentoring & Supervision

From Summer 2021 Mark Tran – Browser Extension Fingerprinting

From Spring 2021 Sheryl Hsu – Malicious Extension Detection

From Spring 2021 Vrushank Gunjur – Over-Privileged Extension Detection

Spring 2021 Nahum Maru – Browser Extension Crawler

Fall 2021 Luca Pistor and Nathan Bhak – Exam Software Security

- Spring 2021 Paul Szymanski – Bachelor Thesis – A Study of State-of-the-Art Call Graph Creation Approaches for JavaScript – with Cristian-Alexandru Staicu
- SS 2020 Anne Christin Deutschen and Luc Seyler – Browser Extensions: Security and Vulnerabilities – with Dolière Francis Somé
- 2019–2020 Marvin Moog and Markus Demmel – Overview and Analysis of JavaScript Obfuscation Techniques
- WS 2019–2020 Maximilian Zöllner and Niklas Kempf – Intelligent Fuzzing System for JavaScript
- SS 2018 Nils Glörfeld – In-Depth Analysis of JavaScript Obfuscation Techniques and Deobfuscation
- Winter 2018 Dennis Salzmann – Lexical Malicious JavaScript Detection System

## Additional Skills – Languages

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