

saarland-informatics-campus.de

Saarland Informatics Campus

Welcome for Master Students
in Cybersecurity

Dr.-Ing. Sven Bugiel | October 23, 2023



UNIVERSITÄT
DES
SAARLANDES

SIC Saarland Informatics
Campus



DFKI

Graduate School

CS Department

Excellence Cluster
MMCI

Language
Technology

MPI INF

MPI SWS

Günter-Hotz-Hall

Math Department

CISPA

Center for
Bioinformatics

Library



About SIC (as per October 2023)

- **5 informatics institutes** and **3 collaborating departments** on campus
- Around **2,500 students** from more than **81 countries**
- **77 research groups**, 300 doctoral candidates
- ~ **900 scientists** at SIC
- 24 informatics study programs, **16 research fields**
- **6 Konrad Zuse Medals**, **30+ ERC Grants**, **7 Leibniz Awards**
- **4 Collaborative Research Centres**



More about us:

<https://saarland-informatics-campus.de/en/ueberuns-aboutus/>

RESEARCH

About CISPA













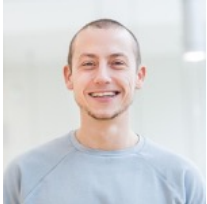



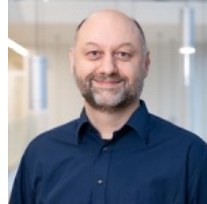
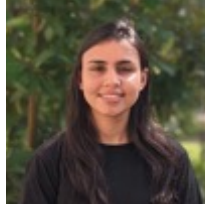
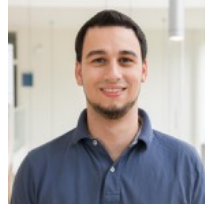

















- (my employer 😊)
- Helmholtz Center for Information Security
- 40+ faculty and senior researchers
- 200+ doctoral/postdoctoral researchers focused on Cybersecurity topics
- 60+ Hiwi students
- Top place for academic research
- Heavily involved in teaching MSc CySec



#	Institution	Count	Faculty
1	▶ CISPA Helmholtz Center 🇩🇪 📊	74.3	23
2	▶ Georgia Institute of Technology 🇺🇸 📊	53.9	26
3	▶ Purdue University 🇺🇸 📊	37.5	20
4	▶ ETH Zurich 🇨🇭 📊	37.2	17
5	▶ Carnegie Mellon University 🇺🇸 📊	31.4	22

RESEARCH

About CISPA: Our Faculty

 Brandt	 Döttling	 Backes	 Boenisch	 Cremers	 Dimitrova	 Holz	 Schönherr	 Abbasi	 Bugiel	 Fahl	 Fass
 Hanzlik	 Joux	 Burkholz	 Dziejic	 Finkbeiner	 Golia	 Schwarz	 Zeller	 Rossow	 Singh	 Golla	 Krombholz
 Loss	 Lenzen	 Fritz	 Lueks	 Jacobs				 Tippenhauer		 Pellegrino	 Staicu
 Marx		 Muandet	 Stich							 Stock	
RA1: Algorithmic Foundations & Cryptography		RA2: Trustworthy Information Processing		RA3: Reliable Security Guarantees		RA4: Threat Detections & Defenses		RA5: Secure Connected and Mobile Systems		RA6: Empirical and Behavioral Security	

**Your Studies at
Saarland University**

YOUR STUDIES

Winter term 2023

- On **October 23**, Saarland University will start lectures for the winter semester of 2023.
- Information about courses and tutorials is provided on the web pages of the lecturers and the [LSF / HISPOS](https://www.lsf.uni-saarland.de/) <https://www.lsf.uni-saarland.de/>

New at Saarland Informatics Campus?

Starting your studies can be quite exciting. Finding your way around after enrollment is not always easy: To make it easier for you, you will find all the important steps on your way to us here - from enrollment to the start of the semester. The study coordinator, the student council and students from higher semesters are always happy to help you get started and are always open to questions and personal concerns.

- | | | | | | |
|---------------------------------------|---|--|---|---|---|
| 1. User account information | ⌵ | 4. Enroll: Math Pre-Course and StEP | ⌵ | 7. Download the Uni-App | ⌵ |
| 2. Get to know fellow students | ⌵ | 5. Access to E-Mail, WLAN and VPN | ⌵ | 8. Information about your semester | ⌵ |
| 3. Follow us on Social Media | ⌵ | 6. Study organisation | ⌵ | | |



Further Information:

<https://saarland-informatics-campus.de/en/semesterinfo/>

YOUR STUDIES

Study Regulations 2021 for Master of Cybersecurity

Read your study documents carefully!

Examination regulations, subject-specific regulations, and study regulations: [Check the website for the joint examination offices of all faculties of Natural Sciences and Technology](#)

You must know your rights and duties as a student!

<https://www.ps-mint.uni-saarland.de/en/programmes/cybersecurity>



PS MINT

> Cybersicherheit / Cybersecurity

Master Cybersecurity

- ▶ [Study regulations](#)
- ▶ [Subject-specific regulations](#)
- ▶ [Subject-specific regulations \(english\)](#)
- ▶ [Module guide](#)

Study Regulations 2021 for Master's programme Cybersecurity

1. **27 graded** credits **core lectures** in computer science

- Security and Cryptography are mandatory subjects (unless already taken; then you **cannot** take them)

2. **30–34 graded** credits **core lectures in Computer Science, advanced lectures in Cybersecurity, or seminar** in Cybersecurity (here: at most one seminar!)

- Note: not **proseminars** (only BSc students)

3. **7 graded** credits in the category of **seminars** in computer science

4. At least **14 ungraded credits** must be acquired by:

- Further courses in computer science (usually 6-9 CP), Master practical training (6 CP each) in research groups at the CS department
- Internship in a company (max. 6 CP); approved by the examination board
- Leading a tutorial (tutor, typically 4 CP), Language courses (max. 6 CP, living language)
- Courses from other departments, which have been applied for and approved by the examination board (e.g., in mathematics, business informatics, or computer linguistics)

5. **12 graded** credits for the **Master's seminar** and **30 CP** for the **Master's thesis**

Suggested schedule for MSc Cybersecurity

1	Security (9 CP)	Core Lecture (9 CP)	Advanced Lecture Cyber Security (6 CP)	Advanced Lecture Cyber Security (6 CP)	30
2	Cryptography (9 CP)	Advanced Lecture Cyber Security (6 CP)	Seminar CySec (7 CP)	Mandatory Elect (8 CP)	30
3	Advanced Lecture Cyber Security (6 CP)	Advanced Lecture Cyber Security (6 CP)	Mandatory Elect (6 CP)	Master's Seminar (12 CP)	30
4	Master's Thesis (30 CP)				30

YOUR STUDIES

Example Course List: All our core courses (offered at least every two years)

Algorithms and Data Structures

Artificial Intelligence

Automated Reasoning

Compiler Construction

Complexity Theory

Computational Logic

Computer Algebra

Computer Architecture

Computer Graphics

Cryptography

Data Base Systems

Data Networks

Distributed Systems

Embedded Systems

Geometric Modelling

Human Computer Interaction

Image Processing and Computer Vision

Information Retrieval and Data Mining

Machine Learning

Operating Systems

Optimization

Security

Semantics

Software Engineering

Telecommunications

Verification

Course catalogue (#1: LSF)

How to choose a lecture – for example: a core lecture

Faculty Mathematics and Computer Science ~~Courses on Computer Science~~

<https://www.lsf.uni-saarland.de/qisserver/rds?state=wtree&search=1&trex=step&root120232=356732%7C367629%7C361398%7C360426%7C361978&P.vx=kurz>

You are here: [Home](#) → [Courses](#) → [Course Overview](#)

[Home](#) | [Login](#) | [Winter 2023/24](#) |

Course Overview

[Search for Lectures](#)

[Lectures today](#)

[Lectures cancelled today](#)

[Search for Lectures](#)

[Hide menu](#)

Course Overview (WiSe 2023/24)

① Vorlesungsverzeichnis

→ ① Mathematics and Computer Science

→ ① Computer Science

→ ① Courses on Cybersecurity / Entrepreneurial Cybersecurity

→ ① Master Cybersecurity

→ ① **Core Lectures**

→ ① Advanced Lectures Cybersecurity

→ ① Seminars Cybersecurity

→ ① Freely chosen Points



**Basic Lectures and Introductory Seminars
can only be taken by bachelor students!**

YOUR STUDIES

Course catalogue (#2: CISPA CMS)

How to choose a lecture – example: in Cybersecurity

<https://cms.cispa.saarland>

Winter term 2023/2024

Games in Machine Learning

Advanced Lecture - Tatjana Chavdarova, Sebastian Stich

Machine Learning in Cybersecurity

Advanced Lecture - Mario Fritz

Mobile Security

Advanced Lecture - Sven Bugiel

Robustness in Machine Learning

Advanced Lecture - Xiao Zhang

Security Testing

Advanced Lecture - Andreas Zeller

Side-Channel Attacks and Defenses

Advanced Lecture - Michael Schwarz

Systems Security

Advanced Lecture - Ali Abbasi, Thorsten Holz

Elements of Machine Learning

Basic and Advanced Lecture - Krikamol Muandet and Jilles Vreeken

Foundations of Cybersecurity 1

Basic Lecture - Ben Stock

Security (WS 2023/2024)

Core Lecture - Thorsten Holz

Verification

Core Lecture - Bernd Finkbeiner

Perspectives of Entrepreneurial Cybersecurity

Lecture Series - Sven Bugiel, Giancarlo Pellegrino

Cybersecurity Lab

Practical Training - Ben Stock

CySec Project Winter Term '23/24

Project - CISPA

Decision Procedures for Verification and Synthesis

Proseminar - Rayna Dimitrova

Usable Security Research to Enhance Online Child Protection

Proseminar - Carolyn Guthoff, Katharina Krombholz

Wireless and Mobile Security

Proseminar - Mridula Singh

Advanced Theory of Secure Messaging

Seminar - Cas Cremers

An Extravaganza of Algorithmic Models

Seminar - Sebastian Brandt, Alexandre Nolin

Complexity of Games

Seminar - Dániel Marx, Tim Hartmann

Machine Learning Security Reproducibility

Seminar - Lea Schönherr

Mining Input Structures

Seminar - Rafael Dutra + Andreas Zeller

New Developments in PETS

Seminar - Wouter Lueks

Privacy of Machine Learning

Seminar - Yang Zhang

Pruning deep neural networks for lottery tickets

Seminar - Rebekka Burkholz

Static Program Analysis Lab

Seminar - Jordan Samhi + Andreas Zeller

The Web Security Seminar

Seminar - Aurore Fass, Giancarlo Pellegrino, Cristian-Alexandru Staicu, Ben Stock

YOUR STUDIES

Course catalogue (#3: Seminars)

IMPORTANT: MANDATORY SEMINAR BIDDING & REGISTRATION DEADLINE ON APR 19 23:59!

<https://seminars.cs.uni-saarland.de>

The central registration for all computer science seminars will open on March 12th.

This system is used to distribute students among the available seminars offered by the CS department. To register for any of the seminars, you have to register here until April 17th, 23:59 CET. You can select which seminar you would like to take, and will then be automatically assigned to one of them on April 19th.

YOUR STUDIES

Control of progress

Full-time students are expected to deliver the following minimum requirements in the Master course of study:

- At least **9 credits after 1 semester**
- At least **30 credits after 2 semesters**
- At least **60 credits after 4 semesters**
- At least **90 credits after 6 semesters**

In case a student does not meet the minimum requirements for the second time, he/she shall **lose the right to participate in examinations.**

Students shall be given the opportunity to make a written statement before the examination board makes the final decision in the matter.

Examination registration

Please notice: For **all examinations**, you must register in LSF **one week before** the exam at the latest (final exam and/or re-exam)! **A delayed registration is not allowed!**

A withdrawal is possible **one week** before the exam at the latest; later only with a medical certificate!

For some courses, e.g., seminars, you also must register before the course starts (limited number of participants): Please have a look at the respective website because of the conditions for registration.

Seminar registration: <https://seminars.cs.uni-saarland.de/>

A withdrawal from a seminar registration is only possible three weeks after getting the topic for presentation.

Problems? Please contact the study coordination!

YOUR STUDIES

Contacts (1/2)

Computer Science Students' Representative Council

Students of different study programmes

E1.3, Raum 107

<https://cs.fs.uni-saarland.de/en/>

Study Coordinators: Dr. Rahel Stoike-Sy and Barbara Schulz-Brünken

Assistance in your study organisation and progress:

- questions about the examination and study regulations
- academic or personal problems
- information about exchange semesters, etc.

Building E1.3, rooms 209 and 207

Office hours: Tuesday and Thursday, 11 a.m.-1 p.m.:

Please book your online appointment via MS Teams: <https://www.uni-saarland.de/en/departement/departement-of-computer-science/departement.html>

Emails to: studium@cs.uni-saarland.de



YOUR STUDIES

Contacts (2/2)

Examination office:

Administration and processing of your programme achievements:

- Transcript of record
- registration master thesis
- official certificates
- recognition of external academic achievements, etc.

Building E1.3, room 202

Office hours: information on website:

Emails to: contact person according to degree programme

<https://www.ps-mint.uni-saarland.de/en/home>

SIC System Administration: <https://it.cs.uni-saarland.de/>



Enjoy your studies!
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