

# Christoph R. Landolt

Doctoral Researcher at CISPA Helmholtz Center for Information Security, in adversarial AI, multi-agent learning, and game theory for enhanced cyber security strategies.

🌐 Nationality: Swiss  
📅 02.11.1992  
📍 Saarbrücken, Germany

@ christoph.landolt@outlook.com  
A christophlandolt.com  
🔗 clandolt  
G List of Publications

🗨 Languages: *German* (native), *English* (fluent), *French* (fluent).



## EXPERIENCE

### ELLIS PhD Student

CISPA Helmholtz Center for Information Security

📅 Apr. 2024 - Present 📍 Saarbrücken, Germany

- ELLIS PhD: My research focuses on agentic- and self-improving systems for Cyber Security.
- PhD Advisor: Mario Fritz.

### Research Fellow – CYD Master Thesis Fellowship

Cyber-Defence Campus

📅 Oct. 2024 - Mai. 2025 📍 Lausanne, Switzerland

- Research on "Training of Offensive Penetration Testing Agents with Multi-Agent Reinforcement Learning (MARL)".
- Focused on automating cyber offense and penetration testing capabilities using MARL techniques.
- Participating in cutting-edge research as part of the CYD Fellowships program jointly launched by EPFL and CYD Campus.

### Research Assistant Machine Learning

ICE - Institute for Computational Engineering / Eastern Switzerland University of Applied Sciences - OST

📅 Oct. 2022 - Oct. 2024 📍 Buchs SG, Switzerland

- Applied research focused on data analysis and machine learning, including ConvRNNs, CNNs with ResNET, and Recommender Systems.
- Successfully led and initiated research projects, contributing to the development of innovative solutions in Cyber Security using Reinforcement Learning.
- Developed a CAS course for OST in AI-Driven Cybersecurity and Strategic Defence.
- Effectively communicated complex technical concepts, mentoring students and facilitating a productive learning environment as a Study Tutor.

### Staff Officer / Quartermaster (Captain, OF-2)

Cyber Command, Swiss Armed Forces (compulsory military service)

📅 Oct. 2013 - Mai. 2025 📍 Switzerland

- 2022 - 2025: Staff Officer (Quartermaster) in the specialized cyber staff.
- 2018 - 2021: As a Quartermaster, responsible for finance, accommodation, food, logistics, and administration for a battalion of 1,000 to 1,500 soldiers.
- 2013 - 2017: As a Quartermaster Sergeant, managed finance, accommodation, food, logistics, and administration for a military unit of 200 to 300 soldiers.

### System Administrator

Abraxas Informatik AG

📅 Sept. 2017 - Jan. 2018 📍 Zürich, Switzerland

- Managed system configurations, network security, and client IT infrastructure.
- Automated workflow processes using PowerShell and Bash scripting to enhance system performance and reduce manual intervention.
- Collaborated on implementing a port-based network access control (PNAC) solution, improving network security and access control for clients.

### System Specialist

Abraxas Informatik AG

📅 Aug. 2013 - Apr. 2016 📍 St. Gallen, Switzerland

- Designed, implemented, and maintained internal and external infrastructures and services, including directory services, messaging, unified communications, and monitoring systems.
- Assessed and implemented new technologies, focusing on automation, standardization, and operational efficiency across various services.
- Led sub-projects and contributed as a team member in multiple large-scale infrastructure projects.
- Trained and mentored apprentices in their third and fourth years, guiding their technical and professional development.

### Apprentice in System Technology

Abraxas Informatik AG

📅 Aug. 2009 - Aug. 2013 📍 St. Gallen, Switzerland

- Trained in the design, setup, and management of computer networks, server infrastructures, and IT services.
- Developed foundational skills in security best practices, including access control, vulnerability assessments, and patch management to ensure system integrity.
- Gained foundational skills in software engineering, debugging, and basic programming concepts using languages like PowerShell, SQL and C#.

## EDUCATION

### Master of Science, Engineering with Specialization in Data Science

Eastern Switzerland University of Applied Sciences - OST

📅 Oct. 2022 - Present 📍 Buchs SG, Switzerland

- Prof. Dr. Christoph Würsch and Prof. Dr. Klaus Frick
- Courses on AI, including ML, DL, NLP, IR, CV, and RL.
- Thesis: "Training of Offensive Penetration Testing Agents with Multi-Agent Reinforcement Learning (MARL) on Graphs" as part of the CYD Fellowship.
- CYD Fellowship Mentor: Dr. Julian Jang-Jaccard

### Advanced Course on Data Science & Machine Learning

ICAS - The Interdisciplinary Centre of Advanced Studies

📅 June 10-14, 2024 📍 Tuscany, Italy

- Summer School focusing on Deep Learning, Generative AI, and Reinforcement Learning (equivalent to 8 ECTS for PhD students).

### Bachelor of Science FHO in Systems Engineering with Specialization in Computer Science

Eastern Switzerland University of Applied Sciences - OST

📅 Aug. 2019 - Sep. 2022 📍 St. Gallen, Switzerland

- Supervising Professors: Prof. René Pawlitzeck and Prof. Dr. Klaus Frick
- Thesis on Anomaly Detection in Web Traffic using Machine Learning for Attack Recognition.
- Final GPA: 5.27 (Swiss grading system).

### Bachelor in Computer Science (Cancelled due to change of degree program)

École Polytechnique Fédérale de Lausanne

📅 Aug. 2018 - Aug. 2019 📍 Lausanne, Switzerland

### Maturity (Passerelle)

Interstaatliche Maturitätsschule für Erwachsene St. Gallen

📅 Aug. 2016 - Aug. 2017 📍 St. Gallen, Switzerland

- Additional Exam: "Passerelle Berufsmaturität – universitäre Hochschule."
- Final GPA: 5.2 (Swiss grading system).

### Technical Vocational Maturity (Part-time)

Berufs- und Weiterbildungszentrum Wil-Uzwil

📅 Aug. 2014 - Aug. 2016 📍 Wil, Switzerland

- Final GPA: 5.2 (Swiss grading system).

### Information Technologist, Federal Diploma of Vocational Education and Training

St. Gallen Centre of Vocational Education and Training (GBS)

📅 Aug. 2009 - Aug. 2013 📍 St. Gallen, Switzerland

- Final GPA: 5.1 (Swiss grading system).

## AWARDS

- **CYD Master Thesis Fellowship** - Highly competitive fellowship providing a living allowance and research funds for six months to support a Master's thesis at the CYD Campus, focusing on cybersecurity and data science, under the supervision of a professor from a Swiss higher education institution.

## VOLUNTEERING

### Associate Editor

16th International Conference on Social Robotics + AI

📅 July 2024 - Present 📍 Odense, Denmark

- Organized and managed a team of sub-reviewers to ensure a thorough scientific peer-review process, responsible for reviewing several papers in the field of AI to maintain the quality of contributions to the conference.

### Head of Finance, head of the diploma newspaper committee, organizing committee of the graduation week

Student Organization, Buchs Campus

📅 Aug. 2020 - Aug. 2022 📍 Buchs, Switzerland

- Association representing student interests to the university administration and organizing sports and social events.
- Oversaw the merger of student organizations at the Buchs, St. Gallen, and Rapperswil campuses.
- Project lead for the diploma magazine and the graduation/campus festival.

### Treasurer & Chairman, St. Gallen Local Group

Swiss Fourier Association, Eastern Switzerland Section

📅 2019 - Present 📍 St. Gallen, Switzerland

- Managed budgeting and resource planning for activities and events for 300 members.
- Organized technical events and lectures, promoting knowledge-sharing and networking.

## PROJECTS

- **Master Semester Project: Deep Reinforcement Learning for Swarms and Multi-Agent Systems in Cyber Security** - This project investigates the creation of a modular and adaptable Multi-Agent Reinforcement Learning (MARL) environment based on game theory considerations. Various scenarios can be automated and tested using a standard penetration testing framework developed from this environment.
- **Innosuisse Research Project on Battery Data** - Implemented changepoint detection in noisy battery measurement data, leading to a machine-learning model for predicting battery aging.
- **Research Project on Consensus-Driven Multi-Agent Language Model Framework** - Researched generative language models for complex tasks, focusing on alignment strategies among multiple agents to solve coding problems collaboratively.
- **Certificate of Advanced Studies (CAS) in AI-Driven Cybersecurity and Strategic Defense** - Developed a program focusing on the intersection of Game Theory, AI, and Cybersecurity. It covers key topics such as Explainable AI (XAI), Adversarial AI, Stackelberg Security Games, and Anomaly Detection, equipping participants with essential skills to secure digital systems.
- **Innovation Booster Robotics Project on Autonomous Drone System for Precise Localization of Avalanche Victims** - Developed a machine learning-based drone system utilizing advanced localization algorithms and optimization techniques to enhance search and rescue operations in avalanche scenarios.
- **Bachelor Thesis: Development of an ML-based Intrusion Detection System (IDS)** - Created a machine learning model for detecting HTTP request attacks, utilizing a data pipeline to analyze and capture attack data from a honeypot.