

Modul PSI-SSSPProject-B Software Systems Science Project: Security and Privacy <i>Software Systems Science Project: Security and Privacy</i>	12 ECTS / 360 h
(seit SS18) Modulverantwortliche/r: Prof. Dr. Dominik Herrmann	
Inhalte: This project is specifically offered for Software Systems Science students. The participants of the project familiarize themselves with security and privacy issues that arise during the development of information systems. Potential tasks during the project include the development of training scenarios for the Insekta platform, designing and/or participating in "build it – break it – fix it" challenges, and contributing to ongoing research activities of members of the Privacy and Security in Information Systems Group. Typically, participants work on their project in small groups. They carry out required research (mostly) on their own, reading about attacks and defenses in textbooks and research papers. Instructors will provide extensive and on-demand support to enable the participants. Students who are interested in this project may approach a member of the PSI group in order to learn about currently available topics.	
Lernziele/Kompetenzen: Successful students will be able to explain attacks and defenses from textbooks and research papers. They will also be able to carry out selected attacks in practice and implement defenses with a programming language of their choice.	
Sonstige Informationen: This project is taught in English, unless all participants are fluent in German. The workload of this project is equivalent to 360 hours (spread over two semesters). Workload breakdown: <ul style="list-style-type: none"> • 20 hrs: Getting familiar with the task, obtaining preliminary knowledge • 60 hrs: Reading papers and researching security vulnerabilities • 30 hrs: Preparing the talks (including time for attendance of other talks) • 200 hrs: Implementation • 50 hrs: Writing project report Note that there are other projects (PSI-ProjectCAD-M, PSI-ProjectPAD, PSI-ProjectSP-M) with different workloads.	
Zulassungsvoraussetzung für die Belegung des Moduls: keine	
Empfohlene Vorkenntnisse: Participants should be familiar with basic concepts in information security and privacy, which can be acquired, for instance, by taking the module "Introduction to Security and Privacy" (PSI-IntroSP-B). This includes basic knowledge about the commonly used security terminology, common types of malware and attacks, buffer overflows and related attacks, cryptography, network security, web security, and concepts of privacy.	Besondere Bestehensvoraussetzungen: keine

<p>Moreover, participants should have practical experience with at least one scripting or programming language such as Python or Java. Experience with Linux environments, web technologies, and network protocols is recommended.</p>		
<p>Angebotshäufigkeit: WS, SS</p>	<p>Empfohlenes Fachsemester:</p>	<p>Minimale Dauer des Moduls: 2 Semester</p>

<p>Lehrveranstaltungen</p>	
<p>Software Systems Science Project: Security and Privacy Lehrformen: Übung Sprache: Englisch/Deutsch Angebotshäufigkeit: WS, SS</p>	<p>8,00 SWS</p>
<p>Lernziele: cf. module description</p>	
<p>Inhalte: cf. module description</p>	
<p>Literatur: Literature will be announced at the beginning of the project.</p>	

<p>Prüfung schriftliche Hausarbeit / Bearbeitungsfrist: 3 Monate Zulassungsvoraussetzung zur Modulprüfung: Regular attendance at project meetings. zentral organisiert: nein Beschreibung: The module examination consists of two module examination segments. The respective weights of the two module examination segments will be announced at the beginning of the semester in which the project starts. The first segment of the module examination consists of a written report (in English) that includes any source code, datasets, and analysis scripts. The maximum number of points that can be achieved in this part of the module examination is 100. Optionally, participants can submit intermediary results (in English) to collect up to 20 bonus points. If this part of the module examination is passed on its own (generally, this is the case when at least 50 points are obtained), the bonus points will be added to the points achieved in this part of the module examination. The grade 1.0 can be achieved without the bonus points. Details regarding the number of optional submissions during the semester, their type, the points per submission, and the respective deadlines will be announced in the first session of the project.</p>	
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<p>Prüfung Hausarbeit mit Kolloquium / Prüfungsdauer: 30 Minuten Bearbeitungsfrist: 3 Monate</p>	
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Zulassungsvoraussetzung zur Modulprüfung:

Regular attendance at project meetings.

zentral organisiert: nein

Beschreibung:

The module examination consists of two module examination segments. The respective weights of the two module examination segments will be announced at the beginning of the semester in which the project starts.

The second segment of the module examination consists of two parts: Firstly, the participants submit a written report (in English) that includes any source code, datasets, and analysis scripts. Secondly, the participants give a talk in which they defend their work (in English; in German if all participants are fluent in German) by presenting related work, their approach, and results. The maximum number of points that can be achieved in the module examination is 100.

Optionally, participants can submit intermediary results (in English) to collect up to 20 bonus points. If this part of the module examination is passed on its own (generally, this is the case when at least 50 points are obtained), the bonus points will be added to the points achieved in this part of the module examination. The grade 1.0 can be achieved without the bonus points. Details regarding the number of optional submissions during the semester, their type, the points per submission, and the respective deadlines will be announced in the first session of the project.