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Spring 2022

Seminar Civil Law and Computer Science

Distributed Trust in Finance

Fact Sheet

1. Overview

Summary

This interdisciplinary seminar is offered jointly by the Institute for Civil Law and the Institute of Computer Science. Students of computer science and law will work closely together on questions that arise from tensions between the progressing digitalization of the world and the existing law. Participants will work in interdisciplinary groups, and each group addresses one specific problem from a legal perspective and from a technical perspective. The goal is to provide assessments and to develop solutions for the problem from both perspectives.

The topic of the seminar in Spring 2022 will be distributed trust in finance. Recent progress in blockchain technology and cryptocurrencies has led to new forms of financial instruments, markets, exchanges, and services. Those structures are realized only through open-source protocols on public networks, without real-world or legal intermediaries. This field is often summarized as Decentralized Finance (DeFi). Dozens of billions (in CHF) have been invested into Decentralized Finance so far.

Learning outcome

Students are able to

- read and critically analyze legal and/or technical background in the area;
- discuss material in the technical and/or the legal domain;
- demonstrate how to work in a team and contribute to questions beyond their own discipline;
- relate to their own scientific work, if applicable;
- give a scientific presentation, in terms of structure, level of content, and presentation techniques;
- manage their time during the preparation of their work, when operating in teams or independently.

2. Topic

In spring 2022, the Institute for Civil Law and the Institute of Computer Science will hold an interdisciplinary seminar on the topic “Distributed Trust in Finance”. Students of computer science and law will work closely together on questions concerning the emerging decentralized finance (“DeFi”) ecosystem. While traditional finance relies on intermediaries to manage and process financial services, DeFi operates in a decentralized environment using public, permissionless blockchains. The goal of the seminar is to explore how the characteristics of the underlying open-source software protocols and smart contracts can be used to (re-)create financial applications.

Participants will work in interdisciplinary groups and relate their work to practical problems that arise when regulators and practitioners aim at the intersection of blockchain, digital assets, and financial services. In doing so, participating students will hopefully design and discuss truly innovative concepts for issues that have arisen or may arise in practice when DeFi protocols seek to disintermediate finance through both familiar and new service arrangements.

Examples of issues that the students may tackle are, among others:

- How can decentralized structures be classified under corporate and/or civil law?
- How can privacy considerations be consolidated with transaction transparency?
- What are the implications of trust minimized transactions, e.g. for AML/ATF?
- What is the role of governance structures that establish the conditions for protocol changes?
- What is the (legal) role of auxiliary services such as oracles, query systems, and decentralized storage?
- How can the limited interoperability across blockchains and with traditional financial services be addressed?

3. Logistics

Participants

Both students of law as well as students of computer science can participate. The number of participants is limited to 12 students (ideally 6 per field of expertise). Successful participation gives 5 ECTS points.

In order to participate in the seminar, law students do not need to have any previous knowledge of computer science, just as computer science students do not need to have any previous knowledge of law.

Participating law students must have in-depth knowledge of either civil law (OR AT/BT), privacy law, or company law. Master students have priority.

Participating computer-science students should have knowledge in computer security and cryptography. Master students have priority; they can get credit in the same way as with any seminar in the "Swiss Joint Master of Science in Computer Science." Bachelor students with Major "Informatik" may not credit this seminar as a "Bachelor teaching unit" (according to Art. 9 Abs. 7 Studienplan Informatik); however, they may credit it as an early Master teaching unit (in the sense of Art. 9 Abs. 9 Studienplan Informatik) or as a "Freie Leistung." Bachelor students with Minor "Informatik" cannot credit the seminar.

Registration

The registration period begins after the information event (see Schedule below). Registrations will be considered in the order in which they are received. Participation in the seminar will be confirmed to the students promptly. If participation is confirmed, withdrawal from the seminar is no longer possible.

Please send your registration to semir.hermidas@ziv.unibe.ch. The following information must be provided with the registration:

- Name
- Address
- Matriculation number
- Number of completed semesters
- Desired proof of academic achievement (Bachelor or Master program, Major or Minor)
- For Bachelor students in Law only: proof of active participation in the workshop “Einführung in die juristische Arbeitstechnik”

Written papers

The participants will work in groups on different topics. Each group consists of at least one law student and one computer science student. Together they will work on a solution for their topic, the law student from a legal perspective, the computer science student from a technical perspective, and write a paper about their results. The groups are free to submit two separate papers (one regarding the legal aspect, the other regarding the technological one), or to combine their results in one paper. The solution should demonstrate results of the collaboration across the disciplines.

If the participants submit two individual papers, each must be 10-15 pages long. If they combine their results in one paper, it must be 20-30 pages long. In this case, however, the students must indicate the author of each chapter and the legal and technical parts must be of comparable length.

Law students:
Regarding the formal requirements and the evaluation criteria, reference can be made to the corresponding guidelines and regulations of the Law Faculty (available at: <http://www.rechtswissenschaft.unibe.ch/studium/studienprogramme/bachelor_rechtswissenschaft/index_ger.html>).

Computer Science students:
The paper must contain the declaration of consent (available at: <https://www.philnat.unibe.ch/studium/formulare/index_ger.html>).

Oral presentation

On May 13, all groups will present their results in an oral presentation. Each presentation should be approx. 30 minutes, followed by a 10-minute discussion. Active participation of the students is expected – the seminar is not a lecture. Participation in the discussions will be included in the evaluation.

In advance, each group must submit a PowerPoint presentation and a handout for the other participants.

Language

The spoken language of the seminar will be English. However, the papers can be written in English and/or German (it is acceptable that one part of the paper is written in English and the other in German).

Please note that the level of the spoken English during the presentation will of course not be evaluated. The evaluation refers purely to the content of the presented results.

Evaluation

Students are evaluated individually, but it is also taken into account whether the groups have worked as a team and whether a collaborative effort is evident.

4. Schedule

The following mandatory dates for the seminar must be observed:

- **15.12.2021, 17.30h: Information session**
  Place: Zoom meeting
  Professor Eggen, Professor Cachin and Dr. Sillaber will give general information about the seminar and answer questions. The information session will be held as a Zoom meeting. Interested students can contact Semir Hermidas by e-mail (semir.hermidas@ziv.unibe.ch) and will then receive the login details for the Zoom meeting.

  Please note: Participation in the information session does not automatically mean registration for the seminar!

- **15.12.2021, 18.00h: Start of the registration period**
  Students who would like to participate in the seminar can register per e-mail. For further information see Registration above.

- **25.02.2022, 13.00h – 16.00h: Introduction and overview of the topic; group formation**
  Place: tbd
  The seminar will start with an overview of DeFi and blockchains. The professors will introduce the students to the different topics they can choose from. Furthermore, the teams are formed.

- **22.04.2022, 12.00h: Submission of the written papers**
  Each group must send their written papers to the following e-mail address: semir.hermidas@ziv.unibe.ch

- **09.05.2022, 12.00h: Submission of the presentation documents**
  Each group must send their PowerPoint presentation and handout to the following e-mail address: semir.hermidas@ziv.unibe.ch

- **13.05.2022, ca. 08.30 – 17.00h: Presentation of the results**
  Place: tbd
  Each group will give an oral presentation about their topic and present their results, which is followed by a short discussion with all seminar participants.