

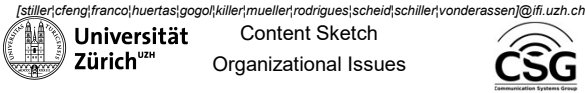
## Internet Economics 16 (IntEco 16)

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Christian Killer, Katharina Müller, Dr. Bruno Rodrigues, Eder Scheid,  
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Content Sketch  
Organizational Issues

## Seminar's Content Sketch

Very high level ...

## Internet Economics – Networking

- Communication networks and distributed systems
  - Goal 1: **Interconnection**
    - Internet-based approach dominates
      - For voice, video, and data, such as files, banking, telemetry, sensing, ...
    - Integration of traditionally separated networks widely performed
      - Voice moved in late 1990's into IP (Internet Protocol)-based backbones and reached the desk in the 10's of the 21<sup>st</sup> century
      - Separated communication channels still remain on different layers
        - Virtual Private Networks (VPN) with dedicated security functionality
        - Mobile Access Networks and, e.g., GSM-R
  - Goal 2: **"Unlimited" application support**
    - Distributed systems determine the major pillar for end-to-end apps
      - Phone network, client-server systems, peer-to-peer systems, clouds
    - Dedicated, but thousands of distributed applications

## Internet Economics – Economics

- Economics
  - Goal 3: **Charging and accounting of secure communications**
    - Network planning, design, roll-out, operations, and maintenance
    - Technical mechanisms to recover costs and reach security
      - Accounting, user-dependent with authentication and authorization, privacy
  - Goal 4: **Incentivizing the use of applications**
    - Introduction of "new" applications drive by incentives
  - Goal 5: **Operating a commercially viable (a) network, (b) services (hardware and software components), and (c) application**
    - Economic mechanisms to recover costs, "make money", or operate
      - Flat fees vs. usage-based pricing and tariffing
    - Billing to handle payments for network/application use

## Example Aspects Under Investigations

- Networks
  - Internet of the Battlefield of Things
  - Emotions via the Air
- Blockchains
  - DeFi
  - Cryptocurrencies
- Security of systems and components
  - Ransomware
  - Business Process Compromise Attacks
  - Pulse-Wave DDoS Attacks
  - Public Trust
  - Cyber War

## Seminar Organization

News and possible updates available at:  
<https://www.csg.uzh.ch/csg/en/teaching/HS22/inteco.html>

## Organization of Student Work

- Target for a single student (or a team)
  - Self-performed, but supervised reading/material investigation
- Process
  - Read, search, think, interact with supervisor, and classify
  - Write: min. about 10-12 pages (20-24 pages for a team of two, or 30-36 pages for 3 students) (LaTeX template to be used)
  - Identification of open issues and hand-in of report's pre-version
    - Optional (recommended) hand-in of presentation to supervisor
  - Integration of changes and corrections mandatory
  - Preparation of a talk: 30 min (1 speaker) or 45 min (2 or 3 s.)
  - Preparation/moderation of a discussion (statements): 40-45 min
    - First, reply to questions and open issues
    - Second, position statements and initiate discussion

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## “Formal” Seminar Goals

- Understand the topic and present it
  - In an oral format accompanied by slides and
  - In a written format (report)
- Learn how to present technical content
  - In a motivating form
  - In a technically correct set-up
  - In a scientific manner, including style and referencing
- Collect experiences in Q&A, moderated sessions
  - By responding precisely to questions asked
  - By discussing pros and cons
  - By positioning your knowhow collected and read through
  - By placing (controversial) statements as discussion items

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## Written Report Content

- Write a self-contained abstract (don't summarize), assume that it is an executive abstract
- Set-up an introduction into the area **and** problem.
- Optionally define basic terms and key issues
- Structure the main chapters according to a top-down **or** bottom-up approach, don't mix and match ☺
- Use figures and tables in a balanced manner and always talk about those in the text!
- Always include a summary at the final end and, optionally, cover conclusions

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## Written Report Timing and Template

- Due date for **all** written draft reports (ToC and bullets only) is Thursday October 13, 2022!
  - All relevant information and details are available at the URL: <https://www.csg.uzh.ch/csg/en/teaching/HS21/inteco.html>
- All written reports have to follow a common style
  - LaTeX determines the *only* seminar's choice
  - Figures in .jpg and .eps
  - Title, Author, Abstract on page one and only on page one
  - Table of content on page two
  - First section and further sections starting from page three
  - Bibliographic references and (optional) list of abbreviations as well as glossary at the final end

ToC : Table of Content

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## Seminar Rating Guidelines

- Initial draft and ToC preparation
  - Completion of final report as specified above (structure)
- Presentation slides
  - 30 or 45 min, respectively, presentation
  - Moderation of 40-45 min discussion incl. 3+ statements
- Showing significant effort to achieve seminar's goals
  - Active participation in all discussions!
- Compliance with all deadlines
- Presence at all minus 1 seminar date
  - In case of failures in any of these items a reduction of the seminar's mark between 0.25 and 0.75 points is possible.
    - Attendance signature sheets are replaced by chat entries

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## Important Dates – Mandatory

- One week before each talk (latest)
  - Slides with content, text, figures, and position statements (3+)
- October 13, 2022
  - Draft written report (for supervisor feedback): ToC + bullets
- November 16, 2022
  - Final written report for final feedback): full text, pics, tables, ...
- December 14, 2022
  - Completely finalized version of (a) written report (with all LaTeX source files) and (b) presentation slides (PPT) submitted
- The 3 pages handout information are mandatory and key for complying with all formal seminar requirements!

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## Distribution of Topics

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## IntEco Topical Domains

- Investigation of economic effects and impacts of **networks, blockchains, and security**
  - Point of view: **Networks & Economics**
    - Internet of the Battlefield of Things
    - Emotions via the Air
  - Point of view: **Blockchains & Economics**
    - DeFi
    - Cryptocurrency Scams
  - Point of view: **Security & Economics**
    - Ransomware, Pulse-Wave DDoS Attacks
    - Pulse-Wave DDoS Attacks, Business Process Compromise Attacks
    - Public Trust, Cyber War

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## Overview of Talk Titles and Dates (1)

- Talk 7: “Sustainable Cybersecurity: Toward a Secure and Sustainable Cyber Ecosystem”
  - Oct 13, 2022      Name: -      Supervisor: Chao Feng
- Talk 3: “Design Options for Decentralized Finance (DeFi) Protocols”
  - Oct 20, 2022      Name: -      Supervisor: Krzysztof Gogol
- Talk 4: “The Internet of the Battlefield of Things (IoBT): Novelities and Economic Impact”
  - Oct 27, 2022      Name: -      Supervisor: Alberto Huertas
- Talk 2: “An Economic Analysis of Ransomware Attacks: Should Companies Pay Attackers or Not?”
  - Nov 3, 2022      Name: assigned      Supervisor: Muriel Franco
- Talk 5: “Cryptocurrency Scams: Overview and Classification”
  - Nov 10, 2022      Name: assigned      Supervisor: Eder Scheid

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## Overview of Talk Titles and Dates (2)

- Talk 6: “On the Security of Processes: An Overview of Business Process Compromise (BPC) Attacks”
  - Nov 17, 2022      Name: assigned      Supervisor: Jan von der Assen
- Talk 1: “New Means of Communication — Sending Emotions through the Air?”
  - Nov 24, 2022      Name: assigned      Supervisor: Eryk Schiller
- Talk 8: “An Overview into Pulse-Wave DDoS Attacks”
  - Dec 1, 2022      Name: assigned      Supervisor: Bruno Rodrigues
- Talk 9: “How does Public Trust Affect the Economic Value of IoT Products?”
  - Dec 8, 2022      Name: assigned      Supervisor: Katharina Müller
- Talk 10: “Cyber War: Economic Impacts, Attribution, and Past Incidents”
  - Dec 15, 2022      Name: -      Supervisor: Christian Killer

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## Your Next Steps

- Today
  - ...
- Tomorrow
  - Contact your supervisor by e-mail, negotiate a first meeting
- Following days and weeks
  - Read, discuss, meet with supervisor, prepare
  - Check seminar’s Web site regularly for updated infos
- **October 13, 2023:** Draft report, draft ToC, plans, bullets
- **November 16, 2022:** Final written report (for feedback)
- **December 14, 2022:** Complete report & slides
- Do register yourself in the “Modulbuchungs-Tool”

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**Have fun and success in the new fall term!**

**Next and first seminar’s date is on-site:  
November 3, 2022**

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