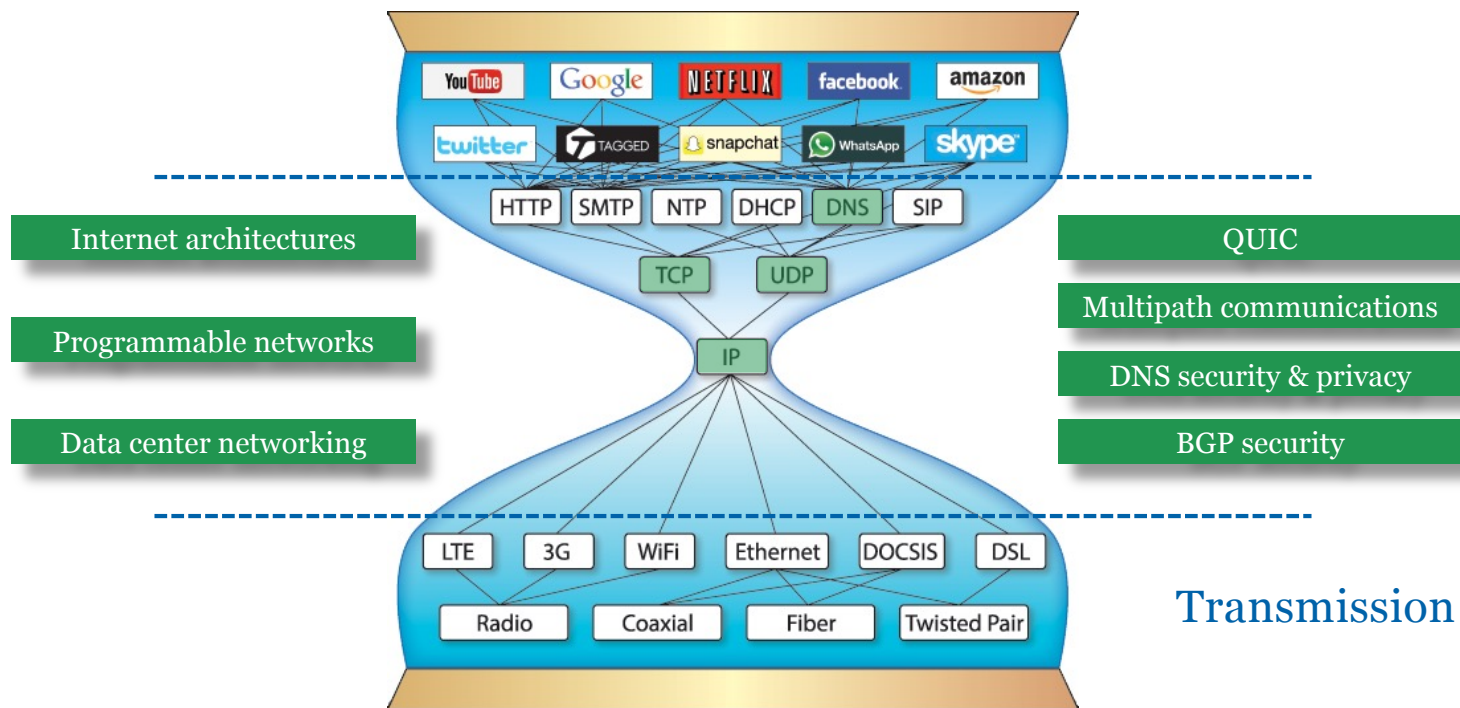# Advanced Networking (ANET)

Sep 5 through Nov 11, 2022 (1A)

4TU.CybSec Master Kick-off | Sep 5, 2022

Cristian Hesselman (University of Twente and SIDN Labs)

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SIDN LABS

ANET topics

Internet architectures

Programmable networks

Data center networking

QUIC

Multipath communications

DNS security & privacy

BGP security

Transmission

ANET is an **overview** course based on **research** papers. It complements Internet Security, which goes more into depth on the security of **specific Internet protocols**.
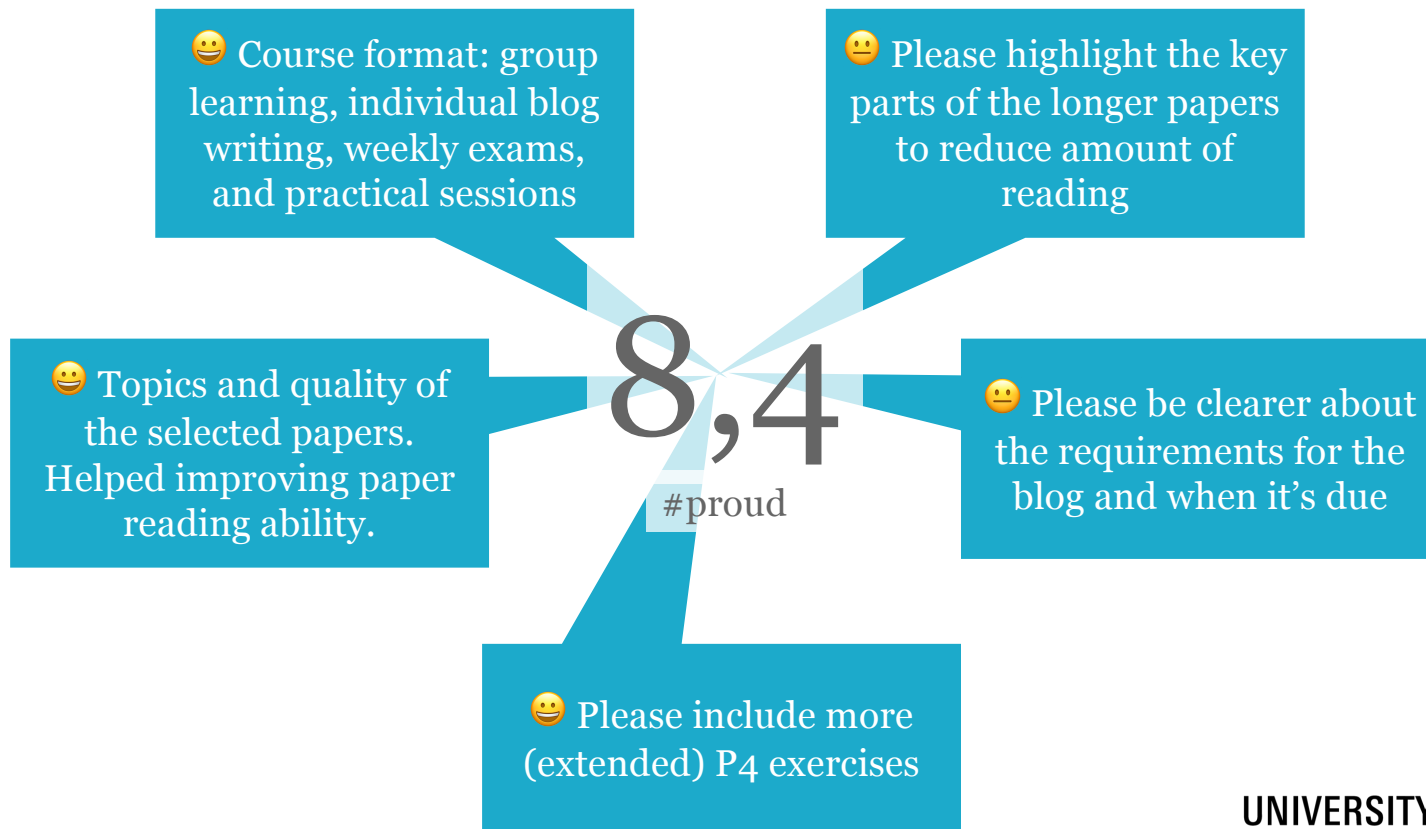
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Organization

- Learning outcomes

  1. Analyze, compare, and discuss advanced Internet concepts

  2. Understand and discuss challenges and solutions

  3. Apply P4 to implement data plane functions

- Assessment

  1. Eight multiple-choice tests, individually and in groups (25%+25%)

  2. One blog (40%)

  3. One presentation in class (10%)

  4. Six P4 lab exercises (pass/fail)

- Eight interactive lectures (mandatory), two guest lectures (industry, academia)

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Class of 2021/2022 feedback (summary)

😀 Course format: group learning, individual blog writing, weekly exams, and practical sessions

😐 Please highlight the key parts of the longer papers to reduce amount of reading

😀 Topics and quality of the selected papers. Helped improving paper reading ability.

8,4
#proud

😐 Please be clearer about the requirements for the blog and when it's due

😀 Please include more (extended) P4 exercises

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SIDN LABS

Fact sheet

Advanced Networking (ANET)	
EC	5 (140 hours)
Prerequisites	Introductory course in computer networking, such as the bachelor module Network Systems at the UT
Coordinator	Cristian Hesselman (SIDN Labs, University of Twente)
E-mail	c.e.w.hesselman@utwente.nl
Teaching team	Dr. Pieter-Tjerk de Boer Prof. Geert Heijenk Prof. Roland van Rijswijk-Deij Niels Overkamp Prof. Cristian Hesselman
Quartile	1A (Sep 5 thru Nov 11, 2022)
Academic year	2022/2023
Capacity	Max 16 students

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SIDN LABS

https://courses.sidnlabs.nl/anet/

Sign up through OSIRIS
First lecture on **Wed Sep 7**!

Interested in doing your master's **project at SIDN Labs?**
Contact Dr. Elmer Lastdrager at elmer.lastdrager@sidn.nl
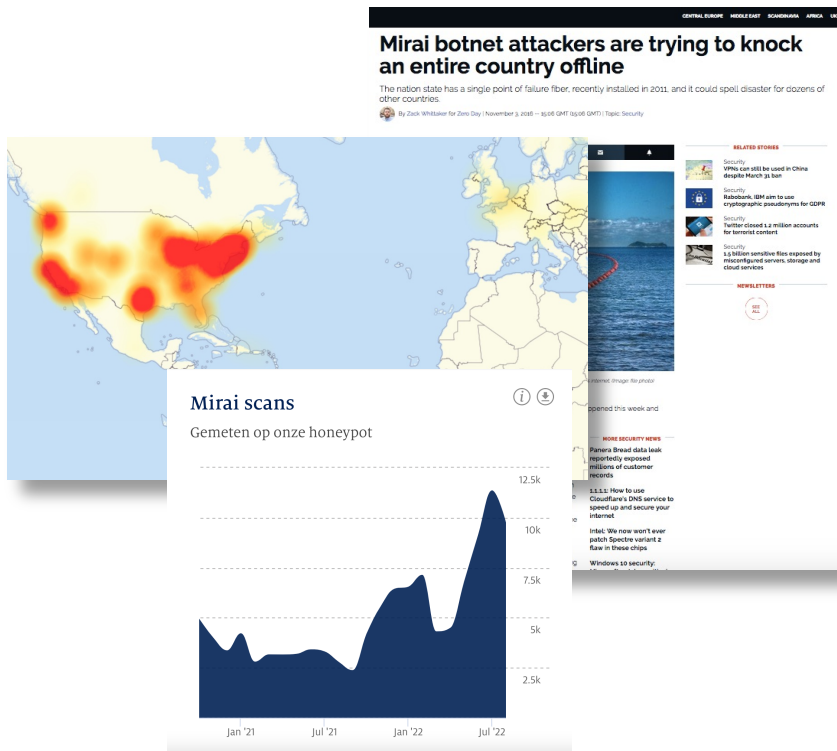
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SIDN LABS

Security Services for the IoT (SSI)

April 24 through June 30, 2023 (2B)

4TU.CybSec Master Kick-off | Sep 5, 2022

Cristian Hesselman (University of Twente and SIDN Labs)

SSI topics

https://stats.sidnlabs.nl/nl/security.html#mirai%20scans

IoT Security Risks & Challenges

IoT botnet measurements

IoT Malware Analysis

IoT Edge Security Systems

oT Device Security

IoT Security in Non-Carpeted Areas

IoT Honeypots

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SIDN LABS

Organization

- Learning outcomes

  1. Understand IoT concepts and applications, security threats, technical solutions, and a few relevant standardization efforts in the IETF

  2. Be able to analyze network traffic of IoT devices and create device profiles that describe this behavior

- Assessment

  - Oral exam on a set of 12 papers (50%)

  - Five-page report on your lab assignment (50%)

  - Twelve paper summaries (pass/fail)

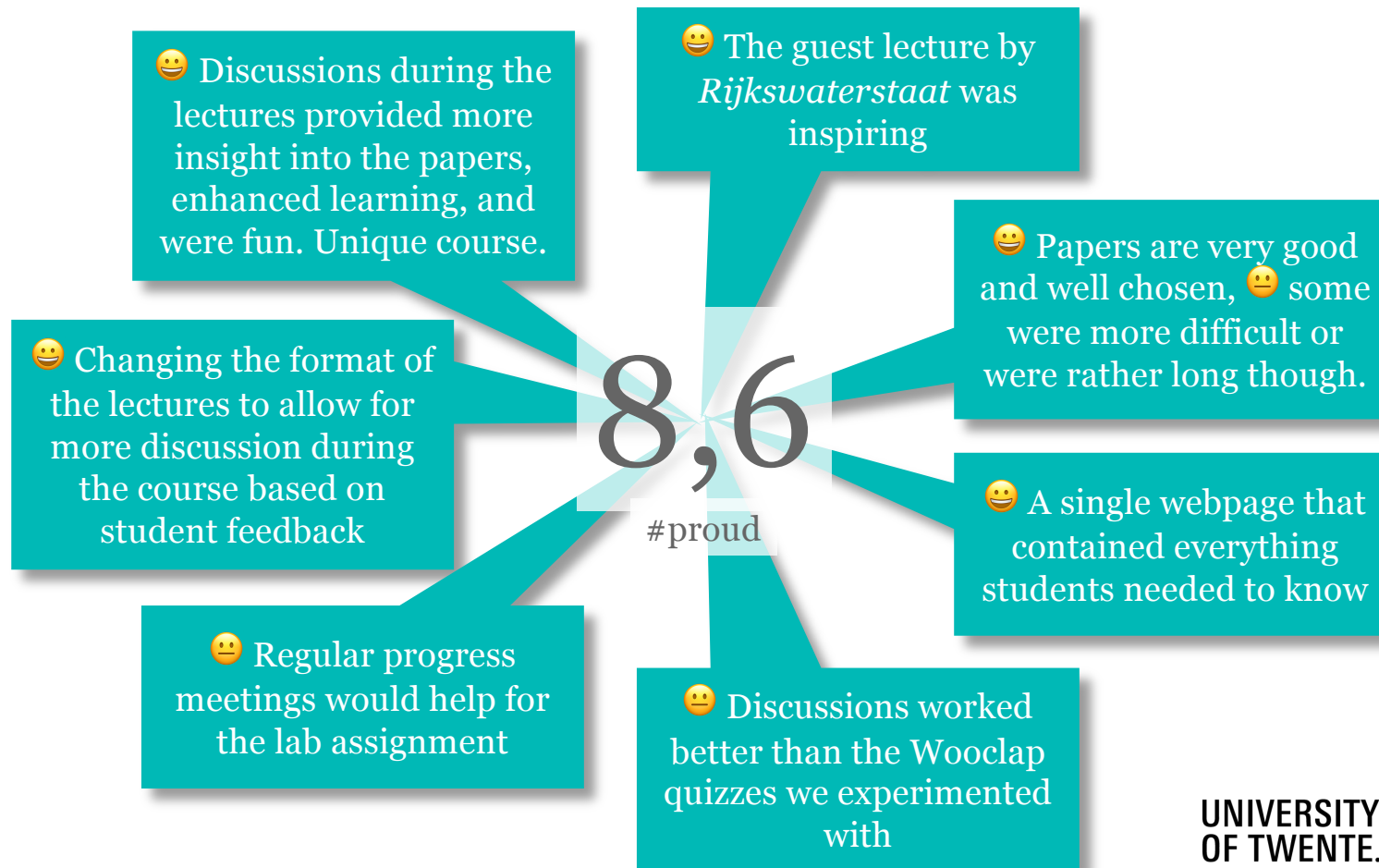- Two guest lectures (industry, academia)

You'll get to work with these

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SIDN LABS

Class of 2021/2022 feedback (summary)

😀 Discussions during the lectures provided more insight into the papers, enhanced learning, and were fun. Unique course.

😀 The guest lecture by *Rijkswaterstaat* was inspiring

😀 Papers are very good and well chosen, 😐 some were more difficult or were rather long though.

😀 Changing the format of the lectures to allow for more discussion during the course based on student feedback

8,6
#proud

😀 A single webpage that contained everything students needed to know

😐 Regular progress meetings would help for the lab assignment

😐 Discussions worked better than the Wooclap quizzes we experimented with

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SIDN LABS

Fact sheet

Security Services for the IoT (SSI)	
EC	5 (140 hours)
Prerequisites	Network Security (ET4397IN) or Internet Security (192654000) or equivalent; good understanding of network systems
Coordinator	Cristian Hesselman (SIDN Labs, University of Twente)
E-mail	c.e.w.hesselman@utwente.nl
Teaching team	dr. Elmer Lastdrager (SIDN Labs) Ramin Yazdani (University of Twente) Etienne Khan (University of Twente) prof. Cristian Hesselman (SIDN Labs, University of Twente)
Quartile	2B (April 24 thru June 30, 2023)
Academic year	2022/2023
Capacity	Max 32 students

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SIDN LABS

https://courses.sidnlabs.nl/ssi/

Sign up through OSIRIS

Interested in doing your master's project at SIDN Labs?
Contact Dr. Elmer Lastdrager at elmer.lastdrager@sidn.nl

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