

# THIJS VAN EDE

PhD Candidate at the University of Twente

## CONTACT

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## RESEARCH INTERESTS

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My current research focuses on the detection of intrusions in evolving systems. Within this research, I concentrate on network-based approaches for constructing and analysing detection mechanisms. This involves modelling normal behaviour of systems, detecting anomalous behaviour, and most importantly, assessing the cause of these anomalies. By doing so, I intend to create an intrusion detection system that automatically evolves and deals with changes that are introduced to the monitored systems.

## EDUCATION

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- since 2018 **PhD in Computer Science** *University of Twente*  
On Evolutionary Intrusion Detection for Changing Environments.
- 2020 **Research visit** *University of California - Santa Barbara (UCSB)*  
Working together with Giovanni Vigna and Christopher Kruegel on the detection of relevant attack patterns in network intrusion detection systems.
- 2015-2017 **Master Degree in Cyber Security - cum laude** *University of Twente*  
Thesis: [Detecting Adaptive Data Exfiltration in HTTP Traffic](#)
- 2012-2015 **Bachelor Degree in Computer Science - with honours** *University of Twente*  
Minor in Computer Science and Finance at *Mälardalen University*.
- 2006-2012 **High School** *Chr. College Nassau Veluwe*  
Pre-university education, specialising in science and engineering.

## EXPERIENCE

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- 2020 **Internship on AI for Network Intrusion Detection** *Lastline (now VMware)*  
A project on automatically detecting patterns in network intrusion.

## PUBLICATIONS

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- 2022 **Thijs van Ede**, Hojjat Aghakhani, Noah Spahn, Riccardo Bortolameotti, Marco Cova, Andrea Continella, Maarten van Steen, Andreas Peter, Christopher Kruegel, and Giovanni Vigna. *“DeepCASE: Semi-Supervised Contextual Analysis of Security Events”*. IEEE Symposium on Security and Privacy (SP). IEEE (*to appear*). 2022.
- 2020 Riccardo Bortolameotti, **Thijs van Ede**, Andrea Continella, Thomas Hupperich, Maarten Everts, Reza Rafati, Willem Jonker, Pieter Hartel, and Andreas Peter. *“HeadPrint: Detecting Anomalous Communications through Header-based Application Fingerprinting”*. Proceedings of the ACM Symposium on Applied Computing (SAC). 2020.

**Thijs van Ede**, Riccardo Bortolameotti, Andrea Continella, Jingjing Ren, Daniel J. Dubois, Martina Lindorfer, David Choffness, Maarten van Steen, and Andreas Peter . *“FlowPrint: Semi-Supervised Mobile-App Fingerprinting on Encrypted Network Traffic”*. Proceedings of the ISOC Network and Distributed System Security Symposium (NDSS). 2020.

2019 Riccardo Bortolameotti, **Thijs van Ede**, Andrea Continella, Maarten Everts, Willem Jonker, Pieter Hartel, and Andreas Peter . *“Victim-Aware Adaptive Covert Channels”*. International Conference on Security and Privacy in Communication Systems (SecureComm). 2019.

2017 Riccardo Bortolameotti, **Thijs van Ede**, Marco Caselli, Maarten H. Everts, Pieter Hartel, Rick Hofstede, Willem Jonker, and Andreas Peter . *“Decanter: Detection of anomalous outbound http traffic by passive application fingerprinting”*. Proceedings of the 33rd Annual Computer Security Applications Conference (ACSAC). 2017.

## TEACHING

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since 2019 Teaching assistant for “Privacy Enhancing Technologies” *University of Twente*

since 2018 Teaching assistant for “AI in Security” *University of Twente*

## ADVISING

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since 2019 Context Aware Identifier Deobfuscation for Android Applications *University of Twente*

2019 *Identifying Application Phases in Mobile Encrypted Network Traffic* *University of Twente*

## AWARDS

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2018 Winner *TGS bridging fund* and finalist of *TGS Award* *University of Twente*

2018 3<sup>rd</sup> place *KNVI Scriptieprijs voor Informatica en Informatiekunde* for best M.Sc. Thesis in computer science *KHMW*

2018 2<sup>nd</sup> place *Joop Bautz Information Security Award* for best M.Sc. Thesis in cyber security *PvIB*

## REFERENCES

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**Maarten van Steen** [m.r.vansteen@utwente.nl](mailto:m.r.vansteen@utwente.nl) *Professor at University of Twente*

**Andreas Peter** [a.peter@utwente.nl](mailto:a.peter@utwente.nl) *Associate Professor at University of Twente*