

“This Paper is Quite Unusual:” Metascience and Structural Misalignment in the Security & Privacy Research Community

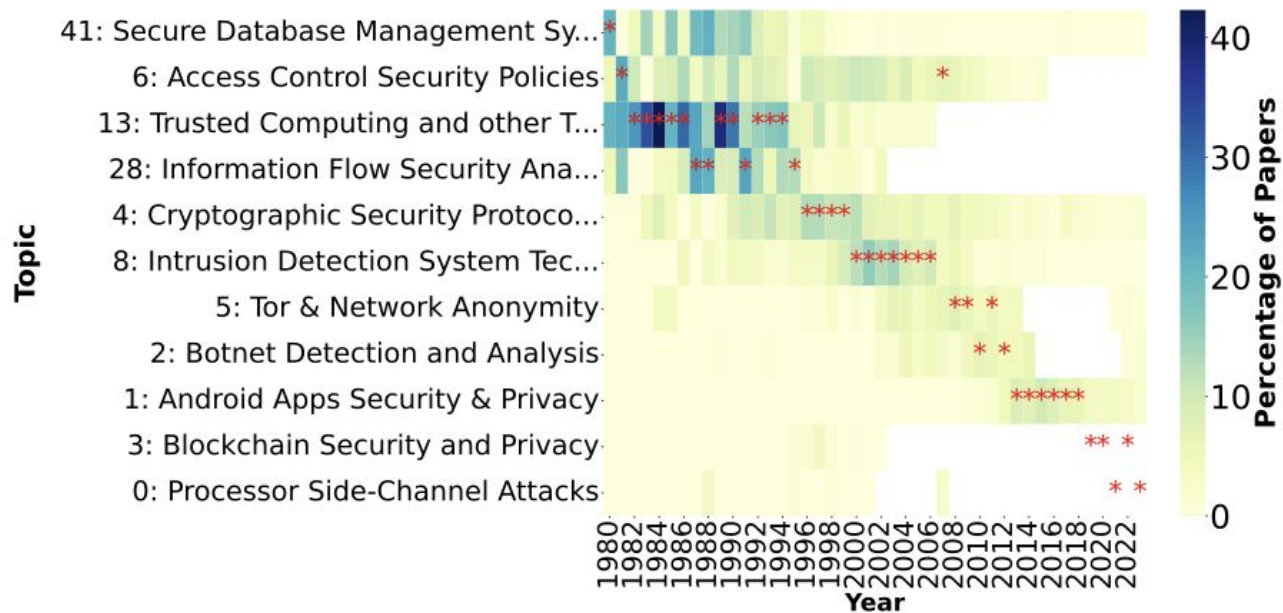
Henry Hosseini, Christian Böttger, **Nurullah Demir**, Tobias Urban



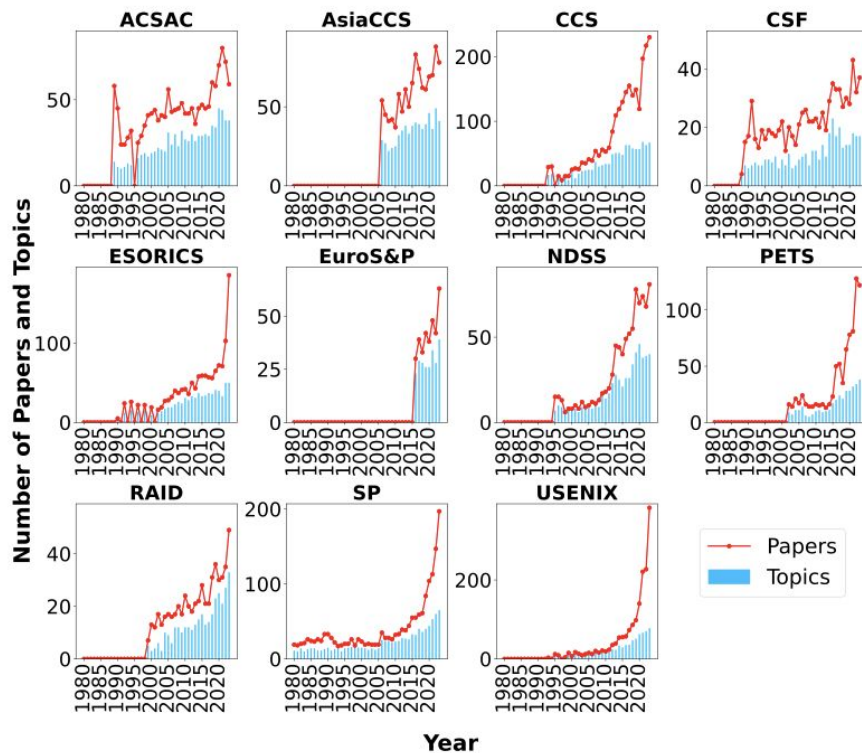
1st Workshop on Metascience and Critical Reflections in Security & Privacy

05/21/2026

How it started



How it started



#95 Four Decades of S&P Research: Evolution of Topics, Impact, and the Community

 [Main](#)

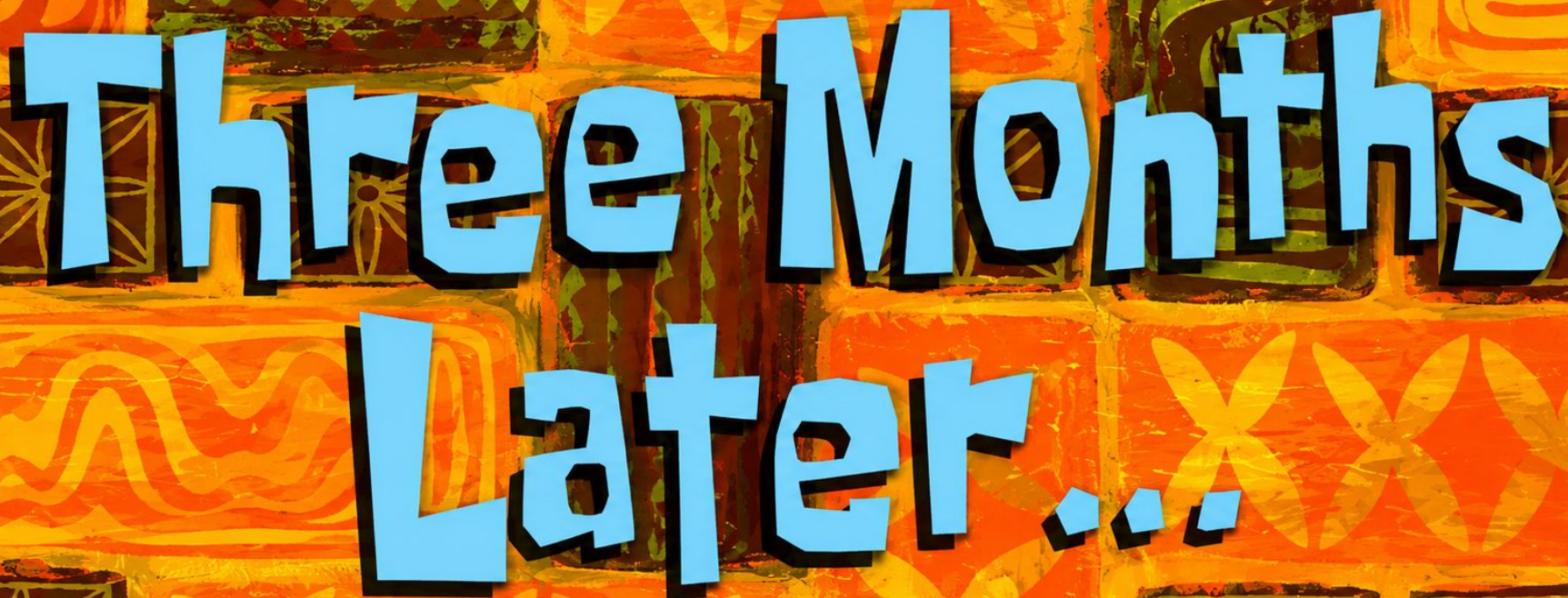
 [Edit](#)

Submitted

 **Submission (4MB)** © Nov 15, 2024, 5:31:37 AM EST ·  95d06304

✓ **Public Meta-Review Confirmation**

✓ **Paper Format Acknowledgement**



**Three Months
Later...**

IF YOU ARE APPLYING FOR UNIVERSITY ELITE

Applying for Elite is based on evidence that is verifiable of outstanding academic achievement and leadership skills. Please give the details of your achievements and leadership skills in the application provided.

Completed the 2 A level examinations that is considered as outstanding. I have been awarded the 1st place in the 1st year. I decided that I have read the book 'The Secret Garden' and I have written the book review. I have also written the book review for 'The Secret Garden' and I have written the book review for 'The Secret Garden'.

NAME
118

ADDRESS
CITY

REJECTED

PLEASE DO NOT WRITE ON THIS SIDE

	TecCor	SciCon	Pre	RecDec	RevCon	ShoSubRev
<u>Review #95A</u>	2	6	2	2	3	1
<u>Review #95B</u>	4	8	4	4	2	1
<u>Review #95C</u>	1	8	1	3	2	1
<u>Review #95D</u>	2	4	1	3	3	1

No technical contributions

No technical contributions

	TecCor	SciCon	Pre	RecDec	RevCon	ShoSubRev
<u>Review #95A</u>	2	6	2	2	3	1
<u>Review #95B</u>	4	8	4	4	2	1
<u>Review #95C</u>	1	8	1	3	2	1
<u>Review #95D</u>	2	4	1	3	3	1

No technical contributions

No technical contributions

Reviewers:

“

I found this paper quite unusual but also very interesting.

”

Reviewers:

“

It was something different than what we traditionally see at S&P venues.

”

Reviewers:

“

[...] which finally leads to some interesting but not technical observations.

”

	TecCor	SciCon	Pre	RecDec	RevCon	ShoSubRev
Review #95A	2	6	2	2	3	1
Review #95B	4	8	4	4	2	1
Review #95C	1	8	1	3	2	1
Review #95D	2	4	1	3	3	1

Highly Confident

Reviewer #C (highly confident):

“

This is neither a SoK paper

”

Reviewer #C (highly confident):

“

This is neither a SoK paper or **a research paper.**

”



Reviewer #C (highly confident):

“

This is neither a SoK paper or **a research paper**.

So, what is the type of this paper?

”

Metascience (definition)

John Ioannidis:

“ The study of research itself

”

Metascience (definition)

John Ioannidis:

“ The study of research itself: its methods

”

Metascience (definition)

John Ioannidis:

“ The study of research itself: its methods, reporting

”

Metascience (definition)

John Ioannidis:

“ The study of research itself: its methods, reporting, reproducibility

”

Metascience (definition)

John Ioannidis:

“ The study of research itself: its methods, reporting, reproducibility, evaluation

”

Metascience (definition)

John Ioannidis:

“ The study of research itself: its methods, reporting, reproducibility, evaluation, and incentives.

”

Metascience's roots

- Biomedical, psychological research
 - Significantly fundamental!

Metascience in computer science

- ACM Conference on Reproducibility and Replicability (ACM REP) (since 2023)
- ACM Internet Measurement Conference - Replicability track (since 2023)
- Workshop on metascience for machine learning (MS4ML) (2025)

Metascience in the S&P community (venues)

- Major milestone:
 - Introduction of artifact evaluation mechanisms
 - Strong encouragement to publish research artifacts
 - Improved quality in review

Metascience in the S&P community

- Several studies on:
 - Trend analysis
 - Reproducibility
 - Influence factors

Metascience in the S&P community

- Several studies on:
 - Trend analysis
 - Reproducibility
 - Influence factors

- Majority of this work published at non-S&P venues

Metascience in the S&P community (venues)

- Call for papers (2023-2026):
 - No metascience-related topics
- Except USENIX 2025:
 - “Replication and Reproduction.”

#	Venue	Abbr.	Rank
1	IEEE Security and Privacy	IEEE S&P	A*
2	Annual Computer Security Applications Conference	ACSAC	A
3	IEEE Computer Security Foundations Symposium	CSF	A
4	European Symposium on Research in Computer Security	ESORICS	A
5	USENIX Security	USENIX Sec	A*
6	Network and Distributed System Security	NDSS	A*
7	ACM Conference on Computer and Communications Security	CCS	A*
8	International Symposium on Research in Attacks, Intrusions and Defenses	RAID	A
9	Privacy Enhancing Technologies Symposium	PETS	A
10	ACM ASIA Conference on Computer and Communications Security	AsiaCCS	A
11	IEEE European Symposium on Security and Privacy	EuroS&P	A

TABLE 1: Top security and privacy venues, sorted by first appearance. The table lists the venues' current names.

What can we do?

- Community recognition
- Venue-level reforms
 - Recognize metascience explicitly (e.g., include related topics in the CfP)

What happened to our paper?

Journal of Cybersecurity, 2026, 12(1), 1–25
<https://doi.org/10.1093/cybsec/tyag007>
Research paper



Four decades of security and privacy research: evolution of topics, impact, and the community

Nurullah Demir^{1,2,*}, Christian Böttger¹, Henry Hosseini^{1,3}, Meryem Demir⁴, Christian Wressnegger⁵, Norbert Pohlmann¹, Tobias Urban¹

¹Institute for Internet Security, Westphalian University of Applied Science, Neidenburger Str. 43, Gelsenkirchen, 45897 North Rhine-Westphalia, Germany

²Department of Computer Science, Stanford University, 353 Jane Stanford Way, Stanford, CA 94305, United States

³Department of Information Systems, University of Münster, Leonardo-Campus 3, Münster, 48149 North Rhine-Westphalia, Germany

⁴Developmental Psychology, Ruhr University Bochum, Universitätsstraße 150, Bochum, 44801 North Rhine-Westphalia, Germany

⁵KASTEL Security Research Labs, Karlsruhe Institute of Technology, Kaiserstraße 12, Karlsruhe, 76131 Baden-Wuerttemberg, Germany

*Corresponding author. Institute for Internet Security/Westphalian University of Applied Sciences, 45897 Gelsenkirchen, Germany.

E-mail: demir@internet-sicherheit.de

Abstract

As digital technologies become increasingly embedded in societal infrastructure, IT security and privacy (S&P) have become critical for protecting sensitive information and preserving trust. These domains have evolved from foundational security measures to address complex challenges introduced by artificial intelligence, regulatory frameworks, and decentralized technologies. This paper presents a longitudinal analysis of the evolution of IT S&P research from 1980 to 2023, analyzing over 13k papers from the most relevant venues. Employing the frameworks of established theories from social sciences, i.e. Latour's actor–network theory, and Bourdieu's forms of capital, along with Leydesdorff's key dimensions in scientometrics, we discuss the evolution of research topics and highlight research priorities in the past and today. We apply modern natural language processing techniques to build a taxonomy of research topics within the S&P community. Using this taxonomy, we analyze the community's thematic development, tracing its growth from 5 topics in the 1980s to 100 distinct research topics, reflecting the field's expanding scope and complexity. Analyzing 0.5M authors, we demonstrate strong collaboration networks in the IT S&P community. We also demonstrate that the proportion of female authors in this community has remained relatively con-

Visit:

pulse-of-cybersecurity.com

Thank you!

Nurullah Demir

nurullah@stanford.edu

Feel free to give feedback:

pulse-of-cybersecurity.com

