

Ahmad B. Usman

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Summary

I am a PhD candidate in Computer Science with a focus on Cybersecurity at Linköping University. My work focuses on trustworthy computing, secure software updates, and vulnerability analysis for computing systems. Alongside research, I bring hands-on security experience (CEH, Security+), teaching and supervision experience, and practical web application development. I am pursuing my PhD under the supervision of [Mikael Asplund](#).

Experience

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|---|---|
| Linköping University - Research Assistant (Cybersecurity) | Dec 2021 - Present
Linköping, Sweden |
| <ul style="list-style-type: none"> Research on secure software updates and trustworthy computing to improve integrity and trust in software states. Produce research prototypes, experiments, and technical documentation supporting peer-reviewed publications. Collaborate within academia to communicate results through reports, presentations, and manuscripts. | |
| HWG s.r.l - Cyber Security Specialist | Sep 2021 - Nov 2021
Verona, Italy |
| <ul style="list-style-type: none"> Supported ongoing security management activities and security operations for enterprise environments. Contributed to standard implementation and risk identification. | |
| SPRITZ - Research Assistant | Sep 2020 - Jul 2021
Padua, Italy |
| <ul style="list-style-type: none"> Research on the security of Industrial Control Systems, with focus on the integration of IT/OT, and the application of machine learning techniques for detection and monitoring. Assisted with experimentation and evaluation; prepared results for academic publication. | |

Education

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|---|-----------------------|
| PhD in Computer Science - Linköping University (Sweden) | Dec 2021 - ≈ Nov 2026 |
| <ul style="list-style-type: none"> Thesis: <i>To be defined</i> diva2: 🔗 | |
| Licentiate in Computer Science - Linköping University (Sweden) | Dec 2021 - Oct 2025 |
| <ul style="list-style-type: none"> Thesis: <i>Trustworthy Software States through Attestation and Secure Updates</i> diva2:1997850 🔗 | |
| MSc. in ICT for Internet and Multimedia - University of Padua (Italy) | Oct 2019 - Jul 2021 |
| <ul style="list-style-type: none"> Track of CyberSystems, Dept. of Information Engineering; GPA: 110/110 Thesis link 🔗 | |
| BSc. in Information Technology - University of Science and Technology (Sudan) | Oct 2013 - Sep 2017 |
| <ul style="list-style-type: none"> Faculty of Computer Science & Information Technology; GPA: 3.78/4 | |

Skills

Security: Trustworthy Computing, Secure Updates, Security Engineering, Vulnerability Research
Programming: C, C++, Python, SQL, Java, JavaScript
Languages: English (Fluent), Arabic (Fluent), Swedish (Intermediate (GRNSVA2: Verksamhetspoäng:700))

Certifications

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| Certified Ethical Hacker (CEH) - EC-Council | Dec 2017 |
| CompTIA Security+ - CompTIA | Sep 2017 |
| CCNA Security - Cisco | Aug 2017 |
| CCNA Routing and Switching - Cisco | Sep 2015 |

Selected Publications

SUIT: Security of Update-related IoT Traffic <ul style="list-style-type: none">• Ahmad B. Usman Emre Süren, and Mikael Asplund Early draft 	Tbd 2026
Understanding Security Weaknesses in Software and Firmware Updates <ul style="list-style-type: none">• Ahmad B. Usman and Mikael Asplund Under review, Journal 	Tbd 2026
Bridging remote attestation and secure software updates in embedded systems. <ul style="list-style-type: none">• Ahmad B. Usman Zeeshan Afzal, and Mikael Asplund Springer 	Feb 2026
On the Inconsistency of Update-Related Vulnerabilities <ul style="list-style-type: none">• Ahmad B. Usman Springer 	July 2025
Update at Your Own Risk: Analysis and Recommendations for Update-related Vulnerabilities <ul style="list-style-type: none">• Ahmad B. Usman and Mikael Asplund Springer 	May 2025
Remote Attestation with Software Updates in Embedded Systems <ul style="list-style-type: none">• Ahmad B. Usman and Mikael Asplund IEEE 	Oct 2024
Remote Attestation Assurance Arguments for Trusted Execution Environments <ul style="list-style-type: none">• Ahmad B. Usman, N. Cole, Mikael Asplund, F. Boeira, C. Vestlund ACM 	Apr 2023

Teaching & Supervision

Linköping University - Teaching Assistant / Lab Assistant		2021 - 2026	Linköping, Sweden
• Concurrent Programming and Operating Systems (TDDE68)	2021-2024		
• Computer Engineering - Bachelor Project (TDDD83)	2022-2026		
• Text Mining (732A81)	2025-2026		
Linköping University - Masters / Bachelor Supervision			
• Masters (diva2:1772753 , diva2:1879960)	2023, 2024		
• Bachelor (diva2:1681942 , diva2:1669983 , diva2:1763650 , diva2:1883545 , diva2:1967210)	2021-2026		

Additional Information

Driving License: Swedish Category B	Nov 2023
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