

MUHAMMED ERBAS

PHD CANDIDATE IN INFORMATION TECHNOLOGY • Cybersecurity & Risk Analyst

muerba@taltech.ee • Ehitajate tee 5, 19086 Tallinn, Estonia

muhammederbass.owlstown.net • [linkedin.com/in/muhammederbass](https://www.linkedin.com/in/muhammederbass) • [ORCID: 0009-0007-7164-2894](https://orcid.org/0009-0007-7164-2894)

SUMMARY

Cybersecurity professional and PhD candidate combining cyber threat intelligence, OSINT, threat modeling, and cyber risk assessment across financial services and IT/OT systems. Experienced in MITRE ATT&CK, evidence-based threat analysis, and translating findings into detection and threat-hunting recommendations.

EXPERIENCE

Swedbank

Sep 2026 - Dec 2026

Technical Intern

- Conduct passive OSINT using dnstwist, theHarvester, and urlscan to assess lookalike domains.
- Assess phishing and brand-impersonation risks; map relevant findings to MITRE ATT&CK.
- Prepare CTI reports and presentations; propose detection use cases and threat-hunting hypotheses.

Tallinn University of Technology

Sep 2024 – Present

Early-Stage Researcher

- Conduct doctoral research on cybersecurity, threat modeling, risk assessment, and AI-related security for complex cyber-physical systems.
- Develop threat modeling methodologies integrating cyber threat intelligence (PASTA, MITRE ATT&CK, MISP).
- Publish and present research at international cybersecurity conferences and journals.
- Collaborate with multidisciplinary teams on EU-funded research projects.
- Support teaching activities and supervision of cybersecurity students.

Starship Technologies

Jan 2024 – Aug 2025

Operations Team Lead

- Monitored robotic delivery systems and troubleshooted operational and software issues to ensure system reliability.
- Led incident response coordination during operational failures, managing escalation and resolution procedures.

EU Horizon 2020 Project — MariCyBERA

Apr 2023 – May 2024

Research Assistant

- Conducted cybersecurity threat modeling and risk assessment for OT/IT systems.
- Contributed to academic publications and presented at international workshops.
- Applied risk assessment frameworks to improve cyber resilience in maritime systems.

Zodiac Maritime Limited

Mar 2020 – Jun 2022

Deck Cadet & 3rd Officer

- Managed onboard IT and navigation systems supporting operations and safety.
- Assisted integration of IT infrastructure upgrades across navigation and cargo systems.

TECHNICAL SKILLS

Cybersecurity: Threat Modeling (PASTA, MITRE ATT&CK), Penetration Testing, Risk Assessment, Network Security

Tools: Wireshark, Nmap, Metasploit, Suricata, OWASP ZAP, MISP, tcpdump, WPScan, Netstat

AI / ML: Adversarial Machine Learning, Anomaly Detection, RAG-based LLM Systems

Programming: Python, MATLAB

Operating Systems: Linux, Windows, macOS

Domains: OT/IT Security, Maritime Cybersecurity, Cyber-Physical Systems

EDUCATION

Tallinn University of Technology

Sep 2024 – Present

PhD in Information Technology — School of Information Technology

Masaryk University

Nov – Dec 2025

Visiting Researcher — Digital Tabletop Exercise in Cybersecurity

Tallinn University of Technology & University of Tartu

Sep 2022 – Jun 2024

MSc in Cybersecurity (joint programme) — full academic scholarship

Istanbul Technical University

Sep 2016 – Jan 2022

BSc in Maritime Transportation and Management Engineering

PUBLICATIONS

- Erbas, M. et al. (2026). [Design and exploratory evaluation of a digital tabletop exercise for maritime cybersecurity](#). *Computers & Security*.
- Erbas, M. et al. (2025). [Integrating Cyber Threat Intelligence into Threat Modeling for Autonomous Ships Using PASTA and MISF](#). *Proc. 2025 IEEE Int. Conf. on Cyber Security and Resilience (CSR)*.
- Erbas, M. et al. (2025). [PASTA Threat Modeling for Cyber Resilience and COLREG Compliance in Autonomous Ship Systems](#). *Proc. 2025 IEEE Int. Conf. on Cyber Security and Resilience (CSR)*.
- Gülmez, Y., Konur, O., Erbas, M. et al. (2025). [Cyber attack vulnerabilities in the main lubricating oil system of marine propulsion units](#). *International Journal of Critical Infrastructure Protection*.
- Erbas, M. et al. (2024). [Systematic literature review of threat modeling and risk assessment in ship cybersecurity](#). *Ocean Engineering*, vol. 306, art. 118059.

CONFERENCES, SPEAKING & PROFESSIONAL SERVICE

- **Feb 2026** — Reviewer, Reliability Engineering & System Safety
- **Jan 2026** — Reviewer, International Journal of Critical Infrastructure Protection
- **2025–2026** — Technical Program Committee Member, IEEE Cyber Security and Resilience (CSR)
- **Dec 2024** — Turku University of Applied Sciences — Threat Modeling for Autonomous Ship Systems
- **Dec 2023** — OWASP Tallinn, Cybersecurity & AI Vol. 1 — Adversarial Attacks on Autonomous Ships
- **Oct 2023** — International Maritime Organization, Cyber-SHIP Lab Symposium, London — Threat Modeling for Autonomous Ships
- **Mar 2023** — Locked Shields 2023, NATO CCDCOE — White Team Participant

PROJECTS & AWARDS

- **MariCyBERA** — EU Horizon 2020 funded researcher in maritime cybersecurity.
- Full academic scholarship for the joint MSc in Cybersecurity (TalTech & University of Tartu).
- **Seeds for the Future 2022 (Huawei)** — 5G project; lead of the Estonian Baltic Team.
- **Maritime Ideas Beyond the Age Ideathon 2021** — 2nd place, Turkish Ministry of Transport.

LANGUAGES & SECURITY INTERESTS

Languages: Turkish (Native) • English (Fluent) • Estonian (Basic)

Interests: Threat Modeling & Risk Assessment • Cybersecurity in AI / Adversarial ML • Cyber Threat Intelligence • IT Risk Management • Cyber-Physical Systems Security