Mostafa Mahdi

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PROFILE

At 10 I earned my first Bitcoin. At 15 I was bypassing SSL pinning on mobile apps. At 16 I reported a critical vulnerability in the Danish Railways. At 20 I shipped the first non-custodial MPC wallet for an entire blockchain network. Computer Science student at the University of Copenhagen with production experience across **cybersecurity**, **blockchain engineering**, **firmware reverse engineering**, and **full-stack development**. Self-taught from day one. MIT xPRO and Google Cybersecurity certified.

CORE COMPETENCIES

Cybersecurity	Vulnerability assessment, penetration testing, supply-chain security, secure coding, OPSEC
Development	TypeScript, Python, Java, C#, Node.js, React, Express, MongoDB, REST APIs, CI/CD, Agile
Blockchain	MPC wallet architecture, UTXO-based systems, smart contracts, crypto integrations, DeFi
Reverse Eng.	Firmware analysis, binary patching, protocol dissection, competitive product teardowns
Research	Cryptographic algorithms (RSA, Miller–Rabin), atmospheric physics modeling, Monte Carlo simulation, OSINT & Custom OSINT tooling
Hardware & IoT	EKG monitors, EHR systems, enterprise networking, cellular IoT, firmware analysis
Leadership	Advisory board experience, cross-functional team leadership, stakeholder management

PROFESSIONAL EXPERIENCE

Advisory Board Member Sep 2025 - April 2026
Viaplay Group — Copenhagen, Denmark

- Serving as an Advisory Board Member for Viaplay Group, providing strategic guidance on content development, platform features, and user experience
- Collaborated directly with the Editor-in-Chief on content strategy and platform direction
- Delivered actionable feedback that led to concrete platform changes, including an upgraded recommendation algorithm, refined content personalization, and reduced over-indexing on reality formats
- Offered insights on market trends and user preferences to inform decisions on content investment and product development for 2026

Security Lead & Senior Web3 Developer Jun 2024 – Oct 2025
Halo Terminal (formerly XODEX) — Dubai / Hybrid

- Architected and built the first non-custodial **MPC wallet** for the Kaspa network, supporting multi-chain functionality on a UTXO-based model
- Designed a high-performance Twitter scraper coupled with a **RAG-based AI model** to surface real-time market sentiment for institutional decision-making
- Built secure, high-throughput Node.js APIs and data pipelines; leveraged reverse engineering to benchmark and surpass competitor products

Information Security Analyst Mar 2024 – May 2024
Grindery Wallet — Singapore (Remote)

- Conducted continuous security audits, uncovering critical vulnerabilities including BGP route hijacking vectors and database exfiltration paths
- Engineered Proof-of-Work-based abuse prevention mechanisms and robust cryptographic key management protocols
- Reduced third-party dependency footprint while hardening security posture without sacrificing product agility

Technology & Operations Manager May 2020 – Present
Padborg Inn — Padborg, Denmark

- Architected and deployed enterprise-grade network infrastructure featuring WiFi 7 with cellular failover and IoT-integrated smart climate control systems
- Engineered a custom management System and competitive intelligence data scrapers to automate dynamic pricing algorithms, significantly increasing occupancy
- Directed the facility's full-scale digital transformation and technical renovation, managing IT procurement and operational technology stacks

VENTURES & NOTABLE PROJECTS

Huawei Balong Modem — Firmware Reverse Engineering (Security Research) 2026

- Reverse-engineered VxWorks-based cellular modem firmware (C-core and A-core) on Huawei Balong chipsets to implement remote eSIM provisioning on unsupported hardware
- Analyzed APDU command flows and SIM–modem communication protocols to enable full remote SIM functionality

Creator — Takbir.io (Atmospheric Physics / Open Source) 2025 – Present

- Built a dawn time calculator using Monte Carlo radiative transfer simulations of atmospheric twilight, solving a problem no commercial calculator addresses by actually modeling the atmosphere
- Validated against real-world observations within 3 minutes under heavy overcast, significantly outperforming conventional fixed-angle methods

Founder — ProCyanol (Biotech) Dec 2024 – Present

- Developing science-backed topical hair-regrowth products leveraging Procyanidin B2, with custom synthesis methods
- Overseeing R&D collaborations with cosmetic formulation experts; preparing for market entry

DSB (Danish Railways) — Responsible Vulnerability Disclosure 2020

- Discovered a critical vulnerability in DSB's ticketing infrastructure that exposed the full ticket database — including records from internal terminals — containing personally identifiable information
- Reported through responsible disclosure, enabling DSB to remediate the flaw

EDUCATION

B.Sc. in Computer Science Sep 2024 – Present

University of Copenhagen (DIKU) — Expected completion Dec 2026

- Ranked #10 in Best Global Universities in Europe (U.S. News). Current coursework includes Algorithms & Data Structures, with an accelerated 60 ECTS / semester

Higher Technical Examination Programme (HTX) Aug 2020 – Jun 2023

EUC Syd — Aabenraa, Denmark

- A-level mathematics and physics. Top 10 nationally in an innovation competition (PowerHub — a custom laptop-class portable power bank)

CERTIFICATIONS

Full Stack Development with MERN — *MIT xPRO* Issued Jan 2026

Cybersecurity Professional Certificate — *Google* Issued Jan 2026

ISC2 Candidate Issued Dec 2024

RECOGNITION & ACTIVITIES

- **3rd place regionally** in a Capture-the-Flag competition organized by the Danish Defence Intelligence Service (FE); top 20 nationally
- **Conference speaker & participant:** TOKEN2049, ETHDubai, Blockchain Life
- **Academic showcase:** EKG Monitor & Electronic Health Record system presented at DTU (Technical University of Denmark)
- Handcrafted RSA encryption from scratch with probabilistic prime generation via Miller–Rabin primality testing (Java)