Curriculum vitae

PERSONAL INFORMATION   Akin Eker

📍 Bristol, UK

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EDUCATION

2021–2025   ## Ph.D. in Computer Science

Thesis Title: "Blockchain-of-Things: Novel System Architectures and Consensus Models as a Scalable Architecture for IoT-Driven Smart Environments"

Advisors: Prof. Theo Tryfonas and Prof. George Oikonomou

University of Bristol, UK

2018-2019   ## Master of Science in Computer Science

Thesis Title: "Recognising and Detecting Activities in ADL Datasets using AI"

Advisor: Dr. Leonardo Aniello

University of Southampton, UK

Taken Modules Include:

– Foundations in Machine Learning | Advanced Machine Learning | Deep Learning | Foundations of Data Science | Data Mining | Data Visualisation

2010–2015   ## Bachelor Degree in Computer Engineering

Dissertation: "Read a Book: A Web Platform that Allows Reading, Purchasing Books, and Note-taking and Researching on One Platform"

Advisor: Prof. M. Ali Akcayol

Gazi University, Turkey

2012–2013   ## Erasmus Programme in Ingeniería Informática (Computer Engineering)

University of Vigo, Spain

Awarded to students with high GPA and top scores in the English proficiency exam.

PUBLICATIONS, PREPRINTS AND ATTENDED CONFERENCES

Conference Papers

– **A. Eker**, T. Tryfonas and G. Oikonomou, "Public Blockchain in Support of Transactive Energy Markets," *2023 IEEE 9th World Forum on Internet of Things (WF-IoT)*, Aveiro, Portugal, 2023, pp. 01-06, doi: 10.1109/WF-IoT58464.2023.10539475.
– **A. Eker**, T. Tryfonas and G. Oikonomou, "A Conceptual Architecture for Scalable Multi-Application Support in Blockchain-based IoT Environments," *2023 IEEE 21st International Conference on Industrial Informatics (INDIN)*, Lemgo, Germany, 2023, pp. 1-6, doi: 10.1109/INDIN51400.2023.10217952.
– **A. Eker**, T. Tryfonas and G. Oikonomou, "FlexBoT: A Scalable Architecture for Multi-Application Supporting BoT Environments with Application Shifting at Runtime," *2024 IFIP Networking Conference (IFIP Networking)*, Thessaloniki, Greece, 2024, pp. 186-194, doi: 10.23919/IFIPNetworking62109.2024.10619067.
– **Eker, A**., et al., "SmartMoveChain: A Proposal for Unified Scalable BMaaS for Smart Cities." *2024 IEEE International Smart Cities Conference (ISR2).* IEEE, 2024.
– Y. Zhang, **A. Eker**, T. Tryfonas, and N. J. Carhart, "Blockchain-based Built Environment Data Management for Modular Construction." *2024 IEEE International Smart Cities Conference (ISR2),* IEEE, 2024.
– G. Kisa Isik, **A. Eker**, T. Tryfonas, G. Oikonomou, "Security Risk Analysis of Logistical Support Solutions for MaaS and DLT-based Mitigations." *2025 IEEE International Conference on Cyber Security and Resilience (CSR 2025)*, IEEE 2025.

Journal Papers

– **A. Eker**, T. Tryfonas and G. Oikonomou, "A Taxonomy and Comparative Analysis of Blockchain Consensus Protocols: Security, Scalability, and the Trilemma", [Under review].
– **A. Eker**, T. Tryfonas and G. Oikonomou, "Blockchain-of-Things (BoT): A Layered Architecture and Performance Evaluation for Scalable IoT Environments", [Under review].

AWARDS & CERTIFICATES

2022 Bristol Plus Award

University of Bristol, UK

An award given only 3% to the University of Bristol students annually.

2022 Innovation and Enterprise Certificate

University of Bristol, UK

2016 Turkish Ministry of Education Scholarship for Postgraduate Students

Ankara, Turkey

Given to students with high GPA and top performance in exams and interviews.

2015 Huawei Seeds for the Future Programme Trainee, Huawei Inc.

Beijing and Shenzhen, China

Selected as one of 15 students nationwide for training in Huawei's technologies and future vision in Beijing and Shenzhen.

TECHNICAL SKILLS & EXPERTISE

Programming Languages:

– Solidity | JavaScript | Python | C++ | Rust | Java | C# | SQL | R

Research and Theoretical Skills:

– Protocol Design | Consensus Algorithms and Blockchain Architectures | Tokenomics | Data-driven Modelling for Decentralised Systems

Blockchain and DeFi Expertise:

– Ethereum (EVM) | Layer 2 Scaling | Zero Knowledge Proofs | MakerDAO | AMMs | Flash Loan Simulation | DeFi Data Engineering | Web3 Applications

Smart Contract Development and Tooling:

– Hardhat | Truffle | Web3.js | OpenZeppelin | Chainlink

Data and Infrastructure:

– SQL | No-SQL (MongoDB) | zkML | IPFS | Docker | AWS | Linux | Contiki-NG

TEACHING APPOINTMENTS

2022 – 2025 Teaching Assistant

University of Bristol, School of Computer Science, and School of Engineering Mathematics and Technology

– **Assisted Units Include:** Financial Technology Group Project | Machine Learning | Introduction to AI and Text Analytics | Advanced Data Analytics | Large Scale Data Engineering | Visual Analytics
– **Role:** Delivered labs, marked assessments, and supervised individual and group projects.

2016 – 2021 Research and Teaching Assistant

Gazi University, Turkey, Department of Computer Engineering

– **Given/Assisted Units Include:** Introduction to Artificial Intelligence with Python | Data Structures with C++ | Computer Networks with C++ | Embedded Systems with C++ | Model Based Programming in Java | Object Oriented Programming with Java | Database Management Systems with Oracle | Software Engineering
– **Role:** Delivered labs and lectures, supervised projects, developed course materials, and assessed coursework.

ACADEMIC CITIZENSHIP & COLLEGIALITY

2023 - Present Peer Reviewer

2025	IEEE International Conference on Cyber Security and Resilience (CSR)
2024	Ad-Hoc Networks, Elsevier
2023	IEEE International Conference on Communications (ICC)

2022-2025 Chief Resident

University of Bristol, UK

Facilitated student transition and wellbeing through mentoring, event coordination (open days, end of the year celebrations and etc.), team leadership, and frontline support within residences.

2021-2022 Postgraduate Hall Representative

University of Bristol, UK

Elected by peers to represent residents, promote wellbeing, and liaise with departments.