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: Assoc. Prof. 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 Comprehensive Analysis of Consensus Algorithms", [Under review].
– **A. Eker**, T. Tryfonas and G. Oikonomou, "An Up-to-Date Review of Blockchain: Architecture, Application Area Suitability with Performance Evaluation", [Under review].

AWARDS, CERTIFICATES AND VOLUNTARY ROLES

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   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

2021-2022   Postgraduate Hall Representative

University of Bristol, UK

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

August 2016   Turkish Ministry of Education Scholarship for Postgraduate Students

Ankara, Turkey

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

August 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.

TEACHING APPOINTMENTS

2022 – 2025 Teaching Assistant

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

Assisted Modules Include (Labs):

– Financial Technology Group Project (Blockchain)
– Large Scale Data Engineering (AWS)
– Systems and Software Security
– Software Development Programming and Algorithms
– Statistical Computing and Empirical Methods
– Advanced Data Analytics
– Machine Learning
– Introduction to AI and Text Analytics
– Visual Analytics
– Software Tools

Assisted labs, marked assessments, and supervised individual and group projects.

2016 – 2021 Research and Teaching Assistant

Gazi University, Turkey, Department of Computer Engineering

Given/Assisted Modules Include (Labs and Teaching):

– 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

Delivered labs and lectures, supervised individual and group projects, developed course materials, assessed coursework, mentored local and international students. Contributed departmental activities, including representation at academic and industry events, planning departmental tasks, and coordinating their distribution and assignment.

SKILLS

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

Research and Project Management:

– Project Leadership and Supervision: Agile Methods (Jira, Kanban) | Supervision of Student Projects | Interdisciplinary Collaboration Across Teams