Khaoula BOUKIR, PhD

Associate professor of computer science

Ibn Tofail University, Morocco

+212 (0)6 75 73 39 80 khaoula.boukir@uit.ac.ma https://khaoulaboukir.github.io/

Nationality : Moroccan / French
Birth : 27/06/1991 (33 ans)

Summary

Dedicated associate professor and researcher with a PhD in computer science, specializing in formal verification, applied for cybersecurity, and safety-critical systems. Proven international experience gained through roles in several academic institutions and research organizations. My current research interests focus on automated translation of high-level requirements into low-level formalized specifications in the form of contracts. Additionally, I am exploring verification frameworks for autonomous decision-making systems

Professional Experience

- **November, 2021 – Present** : associate professor of computer science, Ibn Tofail University <www.uit.ac.ma>
- **January, 2021 – October, 2021** : researcher/postdoctoral Fellow in Formal Methods, CEA Paris-Saclay <www.cea.fr>, France

  Project : Extensive analyses for C program security with Frama-C
- **September, 2019 – August, 2020** : contract researcher and lecturer in computer science, Polytech'Nantes <www.polytech.univ-nantes.fr>,France
- **September, 2017 – August, 2019** : doctoral contract lecturer in industrial computer science and electronics, IUT Nantes <www.iutnantes.univ-nantes.fr>, France
- **September, 2016 - August, 2017** : adjunct lecturer in computer science, Centrale Nantes <www.ec-nantes.fr>, France

Academic Background

- **2016 - 2020** : PhD in computer Science / formal verification / real-time systems, Nantes University <www.univ-nantes.fr/>, France

  Thesis Topic : : Implementation of formally proven real-time scheduling policies
- **2015 - 2016** : Master's degree in real-time systems, Centrale Nantes <www.ec-nantes.fr>, France
- **2012 - 2014** : Engineering degree in networking and telecommunication, l'École Nationale des Sciences Appliquées de Fès <www.ensaf.ac.ma>, Morocco

Research Interests

- **Topics :**
  - Contract-based verification
  - Formal domain-specification languages
  - Deductive verification for cybersecurity
  - Model-checking for real-time operating systems
  - Fomal verification for autonomous systems
- **Current projects :**
  - REAL-AI (PHC Toubkal 2025-2028) : **Real**-time scheduling for **AI** applications in aeronautics
  - CNDE (2022 - 2025) : national project for digitalization in Morocco
- **List of publications :** for a full list of publications, please visit www.khaoulaboukir.github.io/publications.html
- **Supervision (current) :**
  - **PhDs** :
    - Siham Ousaif, FS-UIT and ISEP Paris, "Deductive verification for anomaly detection within IoT systems using Frama-C"
    - Khalil Hamdoun, FS-IUT and Nantes University, "Formal analysis of real-time scheduling of AI applications"
    - Iliass Mellal, FS-UM5, "Security analysis within V2X communication system"
  - **Master students :**
    - Houda Khadiri, FS-UIT, "Improvement of SMT solvers for the formal verification of neural networks"
    - Amine Nasri, ENSIAS - UM5, "Access control analyses using Frama-C" in collaboration with CEA-List
    - Amine Layachi, FS - UIT, "AI-based formal verification of critical systems"

Languages :

Fluent in :

- Arabic
- English
- French