

NOUREDDINE LASLA

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Research Interests

Dr. Nouredine is well experienced in distributed systems, IoT and cyber-security, and has done research related to consensus algorithms, communication protocols, network performances, system architecture and privacy. He has recently developed a novel lightweight Bitcoin simulator and an energy-efficient consensus algorithm for public blockchain. The research interests of Dr. Nouredine include: Distributed Systems, Blockchain, Network protocols & Security, Cyber Physical System, Smart Grid.

Education

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| 2010 – 2015 | University of Science and Technology Houari Boumedi
dian (USTHB)- Algiers, Algeria.
PhD in Subject
Toward an Efficient Localization System for Wireless Sensor Networks. |
| 2006 – 2008 | Superior National School of Computer Science(ESI)- ,
Oued Smar, Algiers, Algeria.
Magister (M.Sc.) in Subject
Key management in Wireless Sensor Networks. |
| 2000 – 2005 | University of Science and Technology Houari Boume-
dian (USTHB)- Algiers, Algeria.
Engineer (B.Sc.) in Subject
Data Replication in Ad-hoc Networks. |

Teaching Experience

- 2021 – 2021 **Lecturer: Programing Concepts (Department of Computer Science and Engineering, Qatar University)**
Teaching Programming Concepts using Python language.
- 2008 – 2009 **Teaching assistant, Sys02: Operating System (USTHB)**
Preparing and instructing graduate labs in the areas of Networking and Operating Systems.

Research Projects

- 2020 – 2020 **Mokafaa: Blockchain-based Transparent Rewarding System to Incentivize People to Commit to Confinement using Wireless Location Monitoring Service**
Applied Research.
Project awarded a three-month grant (QAR70K) from the RRC-QNRF to address COVID-19. In order to tackle COVID-19 pandemic, most of the countries have adopted severe measures and restrictions advocating social distancing, health state monitoring apps and population confinement. Even with the current alleviation of some confinement restrictions, staying home will remain a viable option to mitigate another possible wave of the pandemic. While COVID-19 may last for long, how to motivate people to prolong their stay home commitment and follow government regulations is the main challenge this proposal seeks to address. This project aspires to provide a national transparent rewarding system named "Mokafaa", synonym of reward in Arabic, for people proving accumulating long stay at home times and following government regulations. Mokafaa is a blockchain-based rewarding system that creates incentive for people to maximize their stay-at-home and to continuously enable the EHTERAZ app, which are an important measure ensuring social distancing and help reducing the spread of the COVID-19. we have successfully designed and developed the system including the Blockchain platform deployed at the Ooredoo Cloud and the android mobile app. Here is the link to the developed [Mokafaa Android APK](#)

2018 – 2019

Blockchain-based P2P Energy Trading Platform for Efficient Electric Vehicle Charging

Applied Research.

The project consists in using Blockchain technology to enable peer-to-peer energy trading. We have developed a proof-of-concept prototype demonstrating how Blockchain can be used in peer-to-peer energy trading without referring to a third party for managing the trade. We have mainly created a smart-contract that defines all the trading logic, including the bidding, purchase agreement and billing. We have also developed two mobile apps for both the energy provider and the electric vehicle owner to facilitate interaction with the trading platform. The smart-meters that report both the energy production and consumption of the energy providers and electric vehicles, respectively, are emulated using Raspberry Pi devices. A java-script code was embedded in both smart-meters to allow them to report their readings to the trading platform. In order to assess the scalability of the platform, we have created a test network using docker machines. The network was created based on a private version of Ethereum blockchain, using proof of authority (PoA) consensus algorithm. A java-script code was developed in order to evaluate the performance of the platform, mainly in terms of throughput and latency. The project has been considered as a promoting research project and integrated within [TASMU Innovation Lab at MoTC](#), Qatar.

2014 – 2016

Smart Building using Wireless Sensor Network

Applied Research.

The project is about using wireless sensor networks for electrical energy consumption control in buildings. In this project, we consider the energy consumption control aspect of green buildings and aim at proposing a general solution with wireless sensor networks to control power consumption in our offices at CERIST, as an available and suitable potential test-field. The outcome of this project can be very useful for future construction to achieve green building in our developing country if included and integrated from the earliest stages of a building project. It can also be used to modernized existing buildings and empower them with a high-tech power management asset.