Mauricio ITURRALDE

Researcher in Computer Science

Networking, 5G, 4G, Wireless Networks, Algorithmic
Cyber Security, Q-Learning, Intrusion Detection, QoS

RESEARCH EXPERIENCE

Digital Twins Networks, Architecture and communications Current research
Researcher position at CESI, École d'Ingénieurs *La Rochelle, France*

· This project focuses on treating the data that flows on a Digital Twins (DT) Network. Data optimisation, data analysis, DT communication performance, Artificial Intelligence

Artificial Intelligence applied to energy efficiency in 5G networks Aug. 2018 - Nov. 2018
Researcher position at the IMT Atlantique *Rennes, France*

· This project focused on minimising the energy consumption of base stations in 5G Networks. The proposed approaches are based on q-learning techniques for predicting users traffic in order to smartly switch the base station in any sleep mode level
· Analysis of the data obtained from simulations performed on Mathlab

Mobile relays for railways systems in LTE networks Apr. 2017 - Jul. 2018
Post doctoral position at the IMT Atlantique *Rennes, France*

· This project focused on testing the performance of an imbricated mobile relay architecture in LTE networks for railways transportation systems. The study focused on the analysis of the passengers QoS when using several services under this relay architecture. This project was founded by the Société du Grand Paris
· The architecture was tested in a real test bed with real radio transmissions. Simulations were performed to analyse the QoS in loaded conditions
· A mobile relay module for LTE networks was totally developed in the NS3 simulation tool

Research in several cyber security topics Jan. 2014 - Apr. 2017
Researcher position at University San Francisco de Quito *Quito, Ecuador*

· Password Choosing: Computer security and human choice tendency in Spanish speaking countries
· Stylometry: Authorship attribution in Social Media
· Real-time attacks detection: Algorithms for improving the real-time detection in SIEM systems

Quality of Service in LTE Networks for the SOAPS project Sep. 2012 - Aug. 2013
Postdoctoral Fellow at the LRI labs, Université Paris-Sud *Orsay, France*

· This project focused on the QoS of video transmission in LTE Networks for uplink system
· This project was solution and services integration, in order to mitigate risks in the areas of population protection, infrastructure and site security, major event security, emergency response and crisis management. This project was performed in collaboration with the French industry such as Digiteo, Thales, Cassidian, LRI, Altran
· A uplink module for LTE networks was developed in Lte-Sim simulation tool

Performances of LTE Networks Oct. 2009 - Jul. 2012
Doctoral research at the IRT Enseeiht labs *Toulouse, France*

· This research focused on the QoS of LTE Networks for downlink system.
· Several resource allocation algorithms were proposed for improving the QoS for real time and non-real time services. The interference mitigation in femtocells scenarios topic was also treated during this research

TEACHING EXPERIENCE

CESI, École d'Ingénieurs March 2021 - current position
Associate Professor *La Rochelle, France*

- **Networking:** IPV4, Ethernet, OSI, IP addressing, MAC addressing , hub, switch, routing, Wireless
- **Cyber Security:** Firewall, Network Security, Attack detection, SIEM Systems, pentesting
- **C++ programming:** Object Oriented Programming
- **Operative Systems Administration:** Windows, Linux, services, servers, security

Universidad San Francisco de Quito (USFQ) January 2014 - April 2017
Associate Professor *Quito, Ecuador*

- **Networking:** IPV4, Ethernet, OSI, IP addressing, MAC addressing , hub, switch, routing, Wireless
- **Cyber Security:** Firewall, Network Security, Attack detection, SIEM Systems, pentesting
- **C++ programming:** Object Oriented Programming

Université Paris 11 (Paris-sud) Nov. 2012 - Dic. 2012
Lecturer of Tutorials and Practical Works *Orsay, France*

- Introduction to Programming (C Language). Tutorials and Practical Works

EDUCATION

PhD in Computer Science and Telecommunications Oct. 2009 - Jul. 2012
at Institut National Politechnique de Toulouse *Toulouse, France*

- Thesis tittle: Performances of LTE networks (QoS)

Master in Computer and Information Security Sep. 2008 - Jul. 2009
at Université Paris XII Val de Marne *Paris, France*

- Relevant coursework: Networking security, testing of security, defence techniques, cryptography

TECHNICAL SKILLS

Mobile Networks: design, optimisation, QoS (UTMS, WIFI, LTE, LTE-A, 5G)
Operating Systems: Windows, Linux (Ubuntu, Fedora, Centos), Mac OS, virtualisation
Programming: Bash, C, C++, PHP, Gnu-plot
Simulation tools: NS-3, LTE-Sim, Matlab
Cyber security: pen testing, cryptography protocols, Nessus, Nagios, Nmap, IPsec, SSL
Databases: Relational databases (oracle, mysql),modelling, SQL quering
Decision making mathematical tools: Game Theory, Artificial Intelligence

LANGUAGES

German A2, English C2, French C2 Spanish C2,

PERSONAL

Phone: +33 7 84 34 08 59
email: miturralde@cesi.fr

SCIENTIFIC PUBLICATIONS

A list of my scientific publications in mobile networks can be found in my google scholar profile
`https://scholar.google.com/citations?hl=en&user=6wixfjkAAAAJ&view_op=list_works&sortby=pubdate`