

Programme séminaire annuel e-Adapt / e-Adapt annual workshop program

Date et lieu / Date and location

Jeudi 30 mai / Thursday May 30th

Salle 24 (smart room, bâtiment Pascal) / Room 24 (Pascal building)

Le séminaire pourra être suivi à distance sur Teams / Attendance is possible remotely on Teams : Rejoignez la réunion maintenant / Join the meeting now

Organisation de la journée / Planning

Ouverture de la journée e-Adapt / Opening session

8:30-8:45 : Accueil et mot d'introduction (Ronan Champagnat, responsable de l'équipe e-Adapt)

Séminaire externe : Prof. Yassine Hadjadj-Aoul (Irisa Rennes)

8:45-9:45 Graph Neural Networks: A New Frontier in Network Optimization

Abstract

Network optimization problems are very challenging because they involve many parameters and are dynamic. [++][+] These problems are made even more complex by the fact that they are distributed and require consideration of multiple objectives and constraints related to the supported services. [++][+] Traditional optimization methods often struggle with solving these multi-objective problems because they lack the scalability and robustness needed to adapt to the constantly changing conditions of realistic networks. [++][+] To address these challenges, machine learning, especially reinforcement learning, has been explored as a solution. [++][+] However, these approaches often have difficulty in capturing the network's graph topology and the richness of the underlying information. [++][+] They also struggle to generalize learning and are often considered as black boxes, limiting their practical usefulness. [++][+] In this context, Graph Neural Networks (GNNs) have emerged as a promising solution. [++][+] They utilize deep learning to efficiently process graph-structured data, which is crucial for various networking problems. [++][+] This presentation will focus on the applications of GNNs in network optimization, specifically in network tomography for monitoring and virtual service placement for network slicing. [++][+] We will explore the unique ability of GNNs to capture graph structures and derive representations directly from network data, paving the way for more efficient and intelligent resource allocation strategies. [++][+] By examining both the promises and limitations of GNNs, this talk aims to provide a comprehensive understanding of their applicability in network management and spark curiosity about future research directions in this rapidly evolving field.

9:45-10:00 Pause café/Coffee break

Session « Self-Adaptive Networked Systems and eServices »

10:00-10:30 travaux de Qiu Bin (PhD student, UniKL) – Review of Personalized Learning Recommendation In e-Learning System

10:30-11:00 travaux de Kacem Boussekar (research engineer, L3i) – Learning driver

behavior for adaptive eco-driving with electric vehicles

11:00-11:30 travaux de Mouhamet Ndiaye (research engineer, L3i) – Refining Sensitive Document Classification: Introducing an Enhanced Dataset Proposal

11h30-12:00 travaux de Ababacar Dioukhane (research engineer, L3i) – Mobilité humaine: Prédiction de trajectoires et traces de contact

12:00-13:45 Déjeuner/Lunch

Séminaire interne

13:45-14:30 travaux de Enguerrand De Rautlin (post-doc, L3i) : Détection d'anomalies dans les données mesurées dans les bâtiments par association de connaissances expertes et de techniques d'apprentissage automatique

Session « Trust in Self-Adaptive Systems »

14:30-15:00 travaux de Amine Tellache (PhD student, L3i) – Collaborative Privacy-Preserving Network Intrusion Detection: A Federated Multi-Agent Reinforcement

15:00-15:30 travaux de Mounsf Bendada (research engineer, L3i) – RollupTheCrowd: Leveraging ZkRollups for a Scalable and Privacy-Preserving Reputation-based Crowdsourcing Platform

15:30-16:00 travaux de Hamza Tadlaoui (PhD student, L3i) – Harness the Lightning: Cooperative Dynamics in Blockchain Networks

16:00-16:15 Pause café/Coffee break

Session « Self-adaptive Next-Generation Digital Infrastructures »

16:15-16:45 travaux de Adyson Maya (post-doc, L3i) – Shielded-DRL: Learning from experts to efficiently place microservices in the edge-to-cloud continuum

16:45-17:15 travaux de Salah-Eddine Elgharbi (PhD student, L3i) – OSR: Advancing Multi-Hop Routing for LoRaWAN Mesh Networks in Maritime Scenarios

Clôture de la journée e-Adapt / Closing session

17:15-18:00 Discussions conclusives

Biographies des intervenants séminaires labo

Yassine Hadjadj-Aoul

Yassine Hadjadj-Aoul (<http://people.irisa.fr/Yassine.Hadjadj-Aoul/>) is currently a full professor at the University of Rennes 1, France, where he is also a member of the IRISA Laboratory and the INRIA project-team Dionysos. His main research interests concern the fields of wireless networking, multimedia streaming architectures and protocols, congestion control protocols and QoS provisioning, and satellite and space communications. Dr. Hadjadj has been on the technical program committee of different IEEE conferences, including Globecom, ICC, VTC, PIMRC and IWCMC. His work on multimedia and wireless communications has led to more than 50 technical papers in journals and international conference proceedings.

Enguerrand De Rautlin

Actuellement post-doc au L3i, Enguerrand De Rautlin a soutenu sa thèse, intitulée «

Détection d'anomalies dans les données mesurées dans les bâtiments par association de connaissances expertes et de techniques d'apprentissage automatique », en novembre 2023 à l'université de Bordeaux. Ces travaux ont été menés dans le cadre d'un projet nommé INTELLIB@T en association avec deux laboratoires, l'12M et le LaBRI ainsi qu'un centre de recherche appliquée, NOBATEK/INEF4. Cette thèse a permis de dresser un tableau exhaustif des anomalies de mesures pouvant interférer sur le développement de services intelligents du bâtiment et d'évaluer le potentiel de plusieurs techniques de machine learning pour la détection de ces anomalies.