

Publications

Publications depuis 2008

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Les publications des équipes depuis 2008 peuvent être également consultées à partir des liens suivants :

- [Indexation Multimedia et Intégration de données \(MIDI\)](#)
- [Information, Communications, Imagerie \(ICI\)](#)
- [Architectures, Systèmes, Technologies pour les unités Reconfigurables Embarquées \(ASTRE\)](#)
- [Neurocybernétique](#)

Publications antérieures à 2008

Les publications plus anciennes se trouvent [à cette adresse](#).

10 most recent publications

[hal-02887550] MICN: a network coding protocol for ICN with multiple distinct interests per generation

In Information-Centric Networking (ICN), consumers send interest packets to the network and receive data packets as a response to their request without taking care of the producers, which have provided the content, contrary to conventional IP networks. ICN supports the use of multiple paths; however, with multiple consumers and producers, coordination among the nodes is required to efficiently use the network resources. [...]

[hal-02906962] RF-NoC cognitif pour les architectures manycore

Le développement des architectures manycore avec des milliers de coeurs sur une même puce, révèle de nouveaux défis, notamment vis-à-vis des interconnexions entre coeurs ou groupe de coeurs. L'introduction d'interconnexion RF combiné avec l'OFDMA (Orthogonal Frequency-Division Multiple Access) s'avère

une solution prometteuse. [\[...\]](#)

[hal-02881559] Derivative-Free Optimization over Multi-User MIMO Networks

In wireless communication, the full potential of multiple-input multiple-output (MIMO) arrays can only be realized through optimization of their transmission parameters. Distributed solutions dedicated to that end include iterative optimization algorithms involving the computation of the gradient of a given objective function, and its dissemination among the network users. [\[...\]](#)

[hal-02861460] Fast Gradient-Free Optimization in Distributed Multi-User MIMO Systems

In this paper, we develop a gradient-free optimization methodology for efficient resource allocation in Gaussian MIMO multiple access channels. Our approach combines two main ingredients: (i) the entropic semidefinite optimization method of matrix exponential learning (MXL); and (ii) a one-shot gradient estimator which achieves low variance through the reuse of past information. [\[...\]](#)

[hal-01382285] Distributed stochastic optimization via matrix exponential learning

In this paper, we investigate a distributed learning scheme for a broad class of stochastic optimization problems and games that arise in signal processing and wireless communications. The proposed algorithm relies on the method of matrix exponential learning (MXL) and only requires locally computable gradient observations that are possibly imperfect and/or obsolete. [\[...\]](#)

[hal-01382284] Distributed learning for resource allocation under uncertainty

In this paper, we present a distributed matrix exponential learning (MXL) algorithm for a wide range of

distributed optimization problems and games that arise in signal processing and data networks. To analyze it, we introduce a novel stability concept that guarantees the existence of a unique equilibrium solution; under this condition, we show that the algorithm converges even in the presence of highly defective feedback that is subject to measurement noise, errors, etc. [\[...\]](#)

[hal-02898918] Enhanced Optical-OFDM with Index and Dual-Mode Modulation for Optical Wireless Systems

In this article, we introduce intensity modulation and direct detection compatible enhanced optical-orthogonal frequency division multiplexing with index modulation (EO-OFDM-IM) schemes. These approaches augment the spectral efficiency (SE) relative to classical counterparts by enlarging the index domain information using the so-called virtual sub-carriers. [\[...\]](#)

[hal-02906973] DNNZip: Selective Layers Compression Technique in Deep Neural Network Accelerators

In Deep Neural Network (DNN) accelerators, the on-chip traffic and memory traffic accounts for a relevant fraction of the inference latency and energy consumption. A major component of such traffic is due to the moving of the DNN model parameters from the main memory to the memory interface and from the latter to the processing elements (PEs) of the accelerator. [\[...\]](#)

[hal-02898928] A closed-form solution for energy-efficiency optimization in multi-user downlink NOMA

This paper investigates the energy efficiency of a multiuser downlink non-orthogonal multiple access (NOMA) system. The energy-efficiency maximization representing the tradeoff between the sum rate versus the overall power consumption is formulated as a bi-criterion optimization problem; being convex, scalarization is suitable for its solution. [\[...\]](#)

[hal-02893151] Deep Learning Based Channel Estimation Schemes for IEEE 802.11p Standard

IEEE 802.11p standard is specially developed to define vehicular communications requirements and support cooperative intelligent transport systems. In such environment, reliable channel estimation is considered as a major critical challenge for ensuring the system performance due to the extremely time-varying characteristic of vehicular channels. [\[...\]](#)