Mathieu **Goutay**

PhD Student - Nokia Bell labs, Paris Saclay

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Summary

Ph.D Student in machine learning applied to communication systems at Nokia Bell Labs, Paris Saclay, France. Recently graduated from INSA Lyon, France, with a MSc. in engineering. Technology enthusiast who discovered telecommunications in its infancy and machine learning at university. Particularly interested in the physical layer, deep learning, reinforcement learning, and learning new skills when the need arises.

Education

Nokia Bell Labs — *Paris Saclay, France*

Ph.D Thesis in Machine Learning applied to communication systems — *2019 - Now*

- Preparation of a Ph.D thesis co-supervised by Dr. Jakob Hoydis and Dr. Jean-Marie Gorce, from Nokia Bell Labs, Paris Saclay, and Inria, Lyon.
- Application of diverse Machine Learning techniques to the problem of Digital Predistortion.

INSA Lyon — *Villeurbanne, France*

MSc. in Engineering (Telecommunications) : obtained with jury's congratulations — *2013 - 2018*

- Learning about communication systems, networks, mobile and distributed computing.
- Main courses: signal processing, information theory, computer science, data science, algebra, calculus, and probabilities.
- Specialization in future wireless networks and machine learning.
- Preparatory School in English section : 95% of classes in English.

New Jersey Institute of Technologies — *Newark, NJ, USA*

Echange Student : GPA 4.0/4.0 — *Sept. 2016 - Dec. 2016*

- Learning about Processors, Networks, Technical Writing, Security.

Paul Sabatier High School — *Carcassonne, France*

High-School Degree in Mathematic : obtained with jury's congratulations — *2010 - 2013*

Work Experience

Nokia Bell Labs — *Paris Saclay, France*

AI Research Intern — *Feb. 2018 - Aug. 2018*

- Use of various Machine Learning techniques to enable the end-to-end learning of a communication system without a channel model.
- Theoretical analysis of the proposed solution supported by numerical evaluations realised with Tensorflow.
- Familiarization with Supervised Learning, Deep Reinforcement Learning, and Convolutional Neural Networks.
- Writing of a research article, sumbitted to WiOpt 2019, Avignon.

Alstom - Innovation Department — *Villeurbanne, France*

Research Intern — *Mar. 2017 - Jun. 2017*

- Using Bluetooth Low Energy and other new technologies in order to help people with reduced mobility to take common transports.
- Realisation of a working prototype able to localize disabled passengers and produce corresponding actions.

Academic Experience

Research Project n°2 — *Sept. 2017 - Jan. 2018*

- Extra project for students interested in research. Writing of a survey about Massive MIMO and defining a problematic on this topic.
- Writing and publishing an article, published at ICT 2018, St.Malo.

Innovation Project — *Sept. 2017 - Jan. 2018*

- Large-scale room monitoring to reduce global energy consumption and help people change their habits.
- Elected as the best project out of 16 competitors.

Research Project n°1 — *Mar. 2016 - Jun. 2016*

- Addressing the reception synchronization problems of a MSK-PHY modulation. MATLAB, GNU Radio.

Foreign Languages

English : Business fluent, 990/990 TOEIC (2018)

Spanish : A few notions

Honors & Awards

2019	**First Place in the Machine Learning Challenge**, 6th IRACON Training School on Machine & Deep Learning Techniques for (Beyond) 5G Wireless Communication Systems	*CTTC, Barcelona*
2018	**Best Student**, Nokia France Student Awards	*Paris Saclay, France*

Publications

Massive Machine Type Communications Uplink Traffic: Impact of Beamforming at the Base Station

M. Goutay, L. S. Cardoso and C. Goursaud *2018*

- 2018 25th International Conference on Telecommunications (ICT), St. Malo, 2018, pp. 493-497.
- Available at https://hal.inria.fr/hal-01875596

Deep Reinforcement Learning Autoencoder with Noisy Feedback

Mathieu Goutay, Fayçal Ait Aoudia, Jakob Hoydis *2018*

- Workshop on Machine Learning for Communications WMLC 2019, WiOpt 2019, Avignon, France.
- Available at https://arxiv.org/abs/1810.05419

Referees

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