



# Thomas Sanchez

## Selected Publications

### Conference papers

Z. Sun, F. Latorre, T. Sanchez, and V. Cevher, "A plug-and-play deep image prior," in *ICASSP*, pp. 8103–8107, 2021.

I. Sanchez, Thomas Krawczuk et al., "Uncertainty-driven adaptive sampling via GANs," in *NeurIPS 2020 Workshop on Deep Learning and Inverse Problems*, 2020.

T. Sanchez et al., "Scalable learning-based sampling optimization for compressive dynamic mri," in *ICASSP 2020*, pp. 8584–8588, 2020.

B. Gözcü, T. Sanchez, and V. Cevher, "Rethinking sampling in parallel MRI: A data-driven approach," in *27th European Signal Processing Conference*, 2019.

### Pre-prints

T. Sanchez, I. Krawczuk, and V. Cevher, "On the benefits of deep RL in accelerated MRI sampling," 2021. Under review.

T. Sanchez, I. Krawczuk, Z. Sun, and V. Cevher, "Closed loop deep bayesian inversion: Uncertainty driven acquisition for fast MRI," 2019.

## Education

2018– **PhD in Computer Science**, *École Polytechnique Fédérale de Lausanne*, Switzerland.

- Laboratory for information and inference systems (LIONS) – Supervisor: Volkan Cevher
- Research interests: developing acquisition trajectories for MRI using data-driven approaches; deep-learning methods and rigorous uncertainty modelling.

2015–2018 **Master in Computational Science and Engineering**, *École Polytechnique Fédérale de Lausanne*, Switzerland.

- Numerical Analysis, Machine Learning, Image processing, High-Performance Computing
- Master Thesis on *Learning-Based Non-Cartesian Compressive Sampling for dynamic MRI* supervised by prof. Volkan Cevher. Grade obtained: 6 out of 6.

2012–2015 **Bachelor in physics**, *École Polytechnique Fédérale de Lausanne*, Switzerland.

## Experience

Feb.-Aug. **Laboratory for Information and Inference Systems (LIONS, EPFL).**

2018 Internship at LIONS, continuing the work started during my master thesis.

February-July **Intern at the Ageing in Vision and Action Lab**, *Paris*.

2017 Developed a neural model for goal-directed spatial navigation based on optic flow.

## Relevant Skills

ML **Studied and worked on several of machine learning methods during my PhD**

*GANs for inverse problems*

*CNNs for reconstruction and uncertainty estimation*

*RL for MR acquisition (Q-learning, MCTS)*

*Reconstruction for non-Cartesian MRI*

*Robust and interpretable fundus imaging*

Programming Very good knowledge of Python (including Pytorch), Matlab, Java and C++.

Good knowledge of C and C#.

Lausanne – Switzerland

✉ [firstname.lastname@epfl.ch](mailto:firstname.lastname@epfl.ch)