Cássio FRAGA DANTAS

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Education

2016 – 2019	**PhD in Signal Processing and Machine Learning**, Inria Rennes, France. Main themes: Sparsity-constrained optimization, Dictionary learning, Tensor methods. Supervisor: Dr. Rémi Gribonval.
2014 – 2016	**MSc Electrical Engineering**, UNICAMP, Brazil. GPA: 4/4. Master thesis title: Learning Structured Dictionaries. Supervisor: Dr. Renato R. Lopes.
2010 – 2012	Engineering Cycle ***ÉCOLE POLYTECHNIQUE***, Palaiseau, France. Emphasis in Electrical Engineering.
2008 – 2014	**BSc Electrical Engineering,** UNICAMP, Brazil. GPA : 0,94/1. Class rank: 1st/84.

Experience

Postdoctoral Researcher, *CNRS, Institut de Recherche en Informatique de Toulouse* (from Jan 2020)
- FACTORY ERC project - New paradigms for latent factor estimation.
- Supervisor: Dr. Cédric Févotte.

Teaching Assistant, University of Rennes 1 (Sep 2018 – Dec 2018)
- Object-oriented programming. Responsible for laboratory sessions in Java, 20h.

Digital Communications Research Engineer, *Idea! Electronic Systems* (Jan 2014 – Nov 2015)
- Research, Development and Modeling of physical layer algorithms (equalization / synchronization / coding) for digital communication systems. Digital TV Demodulator (ISDB-Tb standard).

Design Engineer, *LIP6 (Paris 6 Informatics Laboratory)* (Feb 2013 - Jul 2013)
- VHDL implementation of a multi-channel Ethernet Medium Access Controller (MAC), following the IEEE 802.3 standard.

Research Internship, LIP6 - System on Chip department (Apr 2012 - Aug 2012)
- Multi-core computer architecture, cache coherence protocols. Modeling in SystemC .
- Supervisor: Dr. Alain Greiner.

Undergraduate Internship, Schneider Toshiba Inverter Europe (Jul 2011 - Aug 2011)
- Development of a cost estimation tool for Excel (using VBA routines) on a starting project of variable speed drives.

Teaching Assistant, *UNICAMP* (Mar 2009 – Aug 2009) / (Aug 2009 – Dec 2009) / (Aug 2013 – Dec 2013)
- Office hours (8h/week) on: Digital circuits and systems / General Physics / Operations Research.

Publications

Journal papers
- C.F. Dantas, E. Soubies, C. Févotte : Expanding boundaries of Gap Safe screening, *JMLR*, *2021*.
- C.F. Dantas, R. Gribonval : Stable safe screening and structured dictionaries for faster l1 regularization, I*EEE Transactions on Signal Processing*, *2019*.
- C.F. Dantas, M.N. Da Costa, R.R. Lopes : Learning dictionaries as a sum of Kronecker products, *IEEE Signal Processing Letters*, *2017*.
- C.F. Dantas, D. Castro, C.M. Panazio : On enhancing the pilot-aided sampling clock offset estimation of mobile OFDM systems, *Journal of Communication and Information Systems*, *2016*.

Conference papers
- C.F. Dantas, E. Soubies, C. Févotte : Safe screening for sparse regression with the Kullback-Leibler divergence, ICASSP 2021 (virtual). Video + poster.
- C.F. Dantas, J.E. Cohen, R. Gribonval : Hyperspectral image denoising using dictionary learning, *WHISPERS* 2019. Oral presentation.

- C.F. Dantas, J.E. Cohen, R. Gribonval : Learning tensor-structured dictionaries with application to hyperspectral image denoising, *EUSIPCO 2019*. Oral presentation.
- C.F. Dantas, R. Gribonval : Faster and still safe: combining screening techniques and structured dictionaries to accelerate the Lasso, *ICASSP 2018*. Oral presentation.
- C.F. Dantas, J.E. Cohen, R. Gribonval : Learning fast dictionaries for sparse representations using low-rank tensor decompositions, *LVA/ICA 2018*. Oral presentation.
- C.F. Dantas, R. Gribonval : Dynamic screening with approximate dictionaries, *Colloque GRETSI 2017*. Oral presentation.
- C.F. Dantas, D. Castro, C.M. Panazio : Improvement on sampling clock offset estimation for mobile OFDM systems, *SBrT 2015*. Oral presentation.

Other scientific activities

Workshops

- EUROPT : 18th International Workshop on Continuous Optimization, *July 2021*, *Toulouse*, *France (virtual)*. Oral presentation.
- SPARS : The Signal Processing with Adaptive Sparse Structured Representations workshop, *July 2019*, *Toulouse*, *France*. Poster presentation.
- GdR ISIS Seminar : "Nouvelles méthodes tensorielles et applications", *June 2019*, *Paris*, *France*. Oral presentation.
- SPARS : The Signal Processing with Adaptive Sparse Structured Representations workshop, *June 2017*, *Lisbon*, *Portugal*. Oral presentation.
- GdR MIA Seminar : "Parcimonie et applications", *May 2018*, *Bordeaux*, *France*. Oral presentation.

Summer schools

- CIMI-ANITI School on Optimisation, *September 2021*, *Toulouse*, *France*. 10h courses.
- Peyresq Summer School in Signal and Image processing : "Signaux, images et science des données", *July 2018*, *Peyresq*, *France*. 21h courses.
- Structured Regularization for High-Dimensional Data Analysis, *June 2017*, *Institut Henri Poincaré*, *Paris*, *France*. 28h courses.
- SpaRTan/MacSeNet SPARS Summer School, June 2017, Lisbon, Portugal. 18h courses.
- SP Coding School, *January 2015*, *Unicamp*, *Campinas*, *Brasil*. 50h courses.

Event Organization

- Journée Science et Musique (JSM), *Oct 2017 / Oct 2018*. Science vulgarization thematic day at Rennes university for the local community. Planned and managed the events costs and contracts.

Peer Reviewing

- Journal : IEEE Transactions on signal processing; IEEE Trans. on Geoscience and Remote Sensing.
- Conferences : ICASSP; CAMSAP; SBrT.

Online Courses

- Machine Learning (Stanford).
- Introduction to Artificial Intelligence (Stanford).
- Artificial Intelligence Planning (University of Edinburgh).
- Fundamentals for Big Data (Mines-Télécom).
- Control of Mobile Robots (Georgia Tech).
- VLSI CAD Logic to Layout (University of Illinois).
- Circuits and Electronics (MIT).

Other Skills

Software	- Languages: Matlab, Python, Java, C, SystemC, VHDL, VBA (for Excel).
	- Tools: Git/SVN, LaTeX, Linux, Windows, Office.
Languages	- Portuguese (native),
	- English (advanced, 103/120 at TOEFL iBT),
	- French (fluent).