

Augustin Cosse

Ecole Normale Supérieure,
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Paris 75005, FR.
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Research Interests Convex optimization, machine learning, large scale optimization and big data, compressed sensing, numerical analysis, algorithms and complexity, inverse scattering.

Employment **Ecole Normale Supérieure, Ulm, Paris.**
Postdoctoral Fellow, Nov. 2017 - present.
Département de Mathématiques et Applications (DMA).
Fondation Sciences Mathématiques de Paris

New York University, New York, NY.
Visiting Postdoctoral Fellow, Oct. 2016 - Oct. 2017
Courant Institute of Mathematical Sciences and Center for Data Science.
Francqui Foundation Fellow

Education **The University of Chicago, Chicago, IL.**
Invited student, Sept. 2015 - Sept. 2016
Department of Statistics.

Harvard University, Cambridge, MA.
Fellow, Sept. 2014 - July 2015
Institute for Applied Computational Science, School of Engineering.

Massachusetts Institute of Technology, Cambridge, MA.
Invited graduate student, Sept. 2013 - Sept. 2014
Imaging and Computing Group, Department of Mathematics.
FNRS travel grant, MISTI grant, MITEI fund
Activities : MIT sailing club, MIT soccer, MIT rowing club, MIT MUN

Université Catholique de Louvain, Louvain-la-Neuve, Belgium
PhD in Engineering (EECS and Applied Math.), 2012 - 2016
Image and Signal Processing Group, ICTEAM Institute.
Supervisors : Laurent Demanet, Laurent Jacques

Ecole Polytechnique de Louvain, Louvain-la-Neuve, Belgium
M.Eng Mathematical Engineering, 2009 - 2011
2010 - 2011 : *Summa cum laude* (ranked first in mathematical engineering)
2009 - 2010 : *Magna cum laude*
Signal Processing, Modeling and simulation in physics

Publications Stable rank-one matrix completion is solved by two rounds of semidefinite programming relaxation, Augustin Cosse, Laurent Demanet, preprint.

Inverse scattering via semidefinite programming relaxation, Augustin Cosse, Laurent Demanet, preprint.

From Blind deconvolution to Blind super-resolution through convex programming, Augustin Cosse, submitted.

A note on the blind deconvolution of multiple sparse signals from unknown subspaces, Augustin Cosse, in Proc. SPIE Wavelets and Sparsity XVII, 2017.

Rank-one matrix completion is solved by the sum-of-squares relaxation of order two, Augustin Cosse, Laurent Demanet, in Proc. IEEE CAMSAP 2015.

A convex approach to blind deconvolution with diverse inputs, Ali Ahmed, Augustin Cosse, Laurent Demanet, in Proc. IEEE CAMSAP 2015.

A short note on rank-2 relaxation for waveform inversion, Augustin Cosse, Stephen D. Shank, Laurent Demanet, in Proc. SEG annual meeting 2015.

Microwave Imaging From Wheel-of-Time Data, Khaldoun Alkhalifeh, Augustin Cosse, Christophe Craeye, Benoit Macq, in Proc. EUCAP 2014.

Diffeomorphic surface-based registration for MR-US fusion in prostate brachytherapy, Augustin Cosse, in Proc. IEEE MELECON 2012.

- Awards/Grants** Fondation Sciences Mathématiques de Paris (FSMP) Fellow 2017-2019.
Francqui Foundation Fellow 2016-2017
Travel Award, Hausdorff Institute for Mathematics, Bonn, DE.
Belgian National Science Foundation Research Fellow, 2014-2016
MISTI (MIT International Science and Technology) Grant, 2013
Belgian National Science Foundation (FNRS) Travel Grant, 2013
Belgian National Science Foundation Research Fellow, 2012-2014
IEEE Region 8 Best Paper Award (3rd place), 2012
IEEE UCL Student Chapter Best Thesis Award, 2011
FFJM, SCM and Véolia award for optimizing a public transport network, 2009
- Teaching** Substitute teacher for STAT/MATH37760 (Modern Signal Processing)
STAT31100 (Numerical Methods for PDEs)
The University of Chicago 2015 - 2016.
TA Project in Electronics (UCL, LSM, Graduate) 2011, 2012
TA Engineering Project II (UCL, EPL, Undergraduate) 2012, 2013
- Research Stays** Hausdorff Research Institute for Mathematics (HIM), Bonn, Germany, January 2016, Trimester Program on the Mathematics of Signal Processing
- Reviewing activities** IEEE, 2013 International Conference on Sampling Theory and Applications
IEEE, 2017 International Conference on Sampling Theory and Applications
Journal of Fourier Analysis and Applications
- Invited Talks** Ecole Normale Supérieure, FR, Laplace Reading Group, 2018.
University of Delaware, DE, Inverse problems and Analysis Seminar, 2017.
SPIE Wavelets and Sparsity, San Diego, CA, 2017.
Courant Institute, NYC, Harmonic Analysis Seminar, 2017.
Université catholique de Louvain, BE, Applied Math Seminar, 2016.
- Programming** Matlab, Python, C (in the past I coded in Java)
- Languages** **French** : Native
English : Fluent (TOEFL 109/120)
Dutch : Intermediate

Personal

Member of MIT Rowing Club, Novice Competitive team.

Achievements

Lowell Textile River Regatta, Mens 4 : silver,

Mixed 8 : bronze

Chair (WTO) at MIT Model United Nations Conference
(MITMUNC IV)

Music : 6 years music theory, 9 years classical guitar (Q4-level),
Académie de Musique de Court-Saint-Etienne

Ski Touring : Spitzhorn, 2807 m (Winter 2012/2013)

Running, Hiking : Tour des Combins (Summer 2010), Tour du Mont Blanc
(Summer 2009), Pointe de Drôme, 2950 m. (Summer 2010), Mount Monadnock
(USA, NH, Summer 2014)