

Identité / Personal details

Nom et prénom / Name and first name:

Iryna ANDRIYANOVA

Page web personnelle/Personal Webpage :

<https://perso-etis.ensea.fr/andriyanova/>

Position actuelle / Current position

Organisme(s) public(s) français / French public organisation(s)

| Organisme / Organisation | Laboratoire / Laboratory | Code unite / Unit code | Code postal / Postcode | Ville / Town |
|--|--------------------------|------------------------|------------------------|----------------|
| CY Cergy Paris University (University of Cergy-Pontoise before 2020) | ETIS | UMR8051 | 95000 | Cergy-Pontoise |

Titre / Function

Full professor in Computer Science (CNU 27)

Mots-clés / Keywords

Sparse-graph coding, wireless communications, distributed storage, quantum coding, wireless caching, energy-efficiency of data centers, optical communications

Autres activités / Other activities

Dean of the Computer Sciences Department since 2018;
Candidate of College A to the Academic Council of CY Cergy Paris University (elections in Feb.2020)
Co-responsible of the Networks&Security track within the Master program in Computer Science and Engineering of Complex Systems since 2015;
Co-responsible of the teaching program in Coordination of criminalistic investigations (between the University of Cergy-Pontoise and the PJGN) since 2018.

Positions antérieures / Previous positions

| Début / Start date | Fin / End date | Ville / Town | Etablissement / Organisation | Fonction / Function |
|--------------------|----------------|------------------------|---|----------------------|
| 09/2011 | 08/2019 | Cergy-Pontoise, France | UCP. Dept. of Computer Sciences and ETIS laboratory | Associate professor |
| 01/2010 | 08/2011 | Cergy-Pontoise, France | UCP. Dept. of Computer Sciences and ETIS laboratory | Assistant professor |
| 01/2009 | 12/2009 | Cergy-Pontoise, France | ENSEA. ETIS laboratory | Post-doctoral fellow |
| 01/2007 | 12/2008 | Lausanne, Switzerland | Federal Polytechnic School of Lausanne (EPFL) | Research associate |

Formation supérieure / Education

Docent thesis (Habilitation à Diriger des Recherches), University of Cergy-Pontoise, France, obtained in November 2018. Title: *Error-correcting codes and applications: from LDPC codes to datacenters, quantum computers and wireless networks.*

PhD, ENST (Télécom ParisTech), Paris, France, obtained in December 2006. Title: *Analysis and design of TLDPC codes.*

Research Master (DEA) in communication systems, ENST, Paris, France. September 2003.

M.Sc. in telecommunications, National Polytechnic University of Odessa, Ukraine, 2002.

Teaching duties / Activités d'enseignement

Bachelor level: Logics, Languages & automata, Introduction to TCP/IP, Introduction to signal processing

Master level: Queuing theory, Fundamentals of cryptography, Digital communications, VoIP, Wireless communications, Advanced cryptography, Modern coding theory

Students projects: 2-3 Bachelor projects/year, 4-5 Master projects/year

Productions scientifiques / Scientific productions

Projets de recherche, prix, distinctions, bourses, etc. / Grants, prizes, awards, fellowships, etc.

Awards

- Women and Sciences 2019 Award, by the University Paris-Seine, category “faculty member”
- Best Student 2016 Conference Paper Award, by IEEE Swedish Chapter in Vehicular Technology, Communication Theory and Information Theory
Concerned conference paper : J. Pedersen, A. Graell i Amat, I. Andriyanova and F. Brännström, “Repair scheduling in wireless distributed storage with D2D communication,” 2015 IEEE ITW, Jeju, 2015.
- 2 Awards of Scientific Excellence (PEDR) by the Ministry of Education, Research and Innovation: 2012-2016 and 2019-2023

Scientific production

1 patent, 9 international journal papers, 32 international conference papers, 12 invited talks at international conferences, 2 tutorials, 2 plenary talks for a more general scientific public.

Current projects

- 2021-2025 AI4CODE ANR project. Application of AI to error-control design and decoding. Co-PI.
- 2019-2021 ELIOT ANR project. New technologies for the Internet of Things. Co-PI.
- 2018-2021 ECOBIOH2 PIA3 (ADEME) project. Storage and efficient use of renewable energies in intelligent buildings. Co-PI.

Past projects

ANR MUSICO (2017-2021), PEPS DISCO (2015-2018), FP7 NEWCOM# (2012-2015), DIGITEO COREPHY (2009-2014), FUI ECONHOME (2009-2013), ANR COCQ (2009-2013), FP7 ICT-STREP-DAVINCI (2008-2011)

5 publications majeures / 5 most relevant publications

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|---|--|
| 1 | Threshold saturation for nonbinary SC-LDPC codes on the binary erasure channel I. Andriyanova, A. Graell i Amat IEEE Transactions on Information Theory 62 (5), 2622-2638 |
| 2 | Distributed storage in mobile wireless networks with device-to-device communication J. Pedersen, A. Graell i Amat, I. Andriyanova, F. Brännström IEEE Transactions on Communications 64 (11), 4862-4878 |
| 3 | Optimized IR-HARQ schemes based on punctured LDPC codes over the BEC I. Andriyanova, E. Soljanin IEEE Transactions on Information Theory 58 (10), 6433-6445 |
| 4 | Improving code diversity on block-fading channels by spatial coupling N. ul Hassan, M. Lentmaier, I. Andriyanova, G. Fettweis 2014 IEEE International Symposium on Information Theory, 2311-2315 |
| 5 | Spatially coupled quantum LDPC codes I. Andriyanova, D. Maurice, J-P. Tillich 2012 IEEE Information Theory Workshop, 327-331 |

Duties in relation with research and teaching

Comités de sélection, comités d'évaluation etc. / Selection and evaluation committees, etc.

Projects evaluation

- Midterm evaluation of ANR project in Infrastructures : 2017 and 2018
- Reviewer of ANR projects (MRSEI, ANR Blanc) : 2014 and 2017
- Reviewer of funding proposals for Hong Kong Research Council : 2017 and 2018

Selection committees for faculty positions

- 7 MCF selection committees between 2016 and 2021 (where serving as a committee president : 1)
- 3 PU selection committees between 2020 and 2021 (where serving as a committee president : 2)
- 1 PRAG selection committee in 2016 (where serving as a committee president : 1)

PhD and HDR committees

- 5 PhD committees between 2016 and 2019 (1 as president, 4 as a committee member)
- 1 HDR committee in 2019 (as a committee member)
- 5 midterm PhD evaluations