

# Curriculum Vitae

Name: Angela-Manuela DIGULESCU - POPESCU  
Date of birth: 12 May 1987  
Place of birth: Bumbesti-Jiu, Romania  
Nationality: Romanian  
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## Education:

2013 - 2017: *Universite Grenoble Alpes, France.*

*Military Technical Academy of Bucharest, Romania.*

- PhD thesis on advanced algorithms for non-stationary signal analysis:  
<https://tel.archives-ouvertes.fr/tel-01483499v2/document>

2011-2013: *University POLITEHNICA of Bucharest, Romania.*

- Master degree, *Mobile Communications* master program at the *Faculty of Electronics, Telecommunications and Information Technology.*

2006-2010: *Military Technical Academy of Bucharest, Romania.*

- Engineering degree from the *Faculty of Military Electronic and Information Systems.*

2002-2006: “Mihai Viteazul” Military College, Alba-Iulia, Romania.

- Various courses/seminars organized by the “Mihai Viteazul” Military College for the National Mathematics Olympiads and Competitions.

## Employment

2021 – present

- Associate professor at the *Department of Communications and Information Technology, Faculty of Communications and Electronic Systems for Defense and Security, Military Technical Academy “Ferdinand I”, Bucharest.*

2017 – 2021

- University lecturer at the *Department of Communications and Information Technology, Faculty of Communications and Electronic Systems for Defense and Security, Military Technical Academy “Ferdinand I”, Bucharest.*

2013-2017

- Teaching assistant and PhD student at the *Department of Communications and Military Electronic Systems, Faculty of Military Electronic and Information Systems, Military Technical Academy of Bucharest.*
- PhD student at *GIPSA-lab, Universite Grenoble Alpes, France.*

2010-2013

- Teaching assistant at the *Department of Communications and Military Electronic Systems, Faculty of Military Electronic and Information Systems, Military Technical Academy of Bucharest.*

## **Awards and achievements:**

2008: Special award at the “Traian Lalescu” National Mathematics Competition.

2007: Bronze medal at the South Eastern European Mathematical Olympiad for University Students with International Participation (SEEMOUS) from Cyprus.

2006: Special award at the “Marian Tarina” National Competition (Mathematics).

2005: Second award at the “Marian Tarina” National Competition (Mathematics).

2004: Second award at the “Marian Tarina” National Competition (Mathematics).

## **Experience**

October 2013 – February 2014

- Research internship at EDF R&D Chatou Site, STEP Department on the topic: “Detection, localization and quantification of flaws under low pressure difference”.

March 2013 – June 2013

- Research internship for the dissertation thesis completion at GIPSA-lab, INP Grenoble on the topic: “Localization system of acoustic transitory sources”.

April 2010 – June 2010

- Erasmus scholarship for the Bachelor thesis completion at GIPSA-lab, INP Grenoble on the topic: “Non invasive analysis of fluid flows in closed pipelines”.

April 2009 – June 2009

- Erasmus scholarship at GIPSA-lab, INP Grenoble on the topic: “Non invasive analysis of fluid flows in closed pipelines”.

## **Computer skills**

- MATLAB, Python, Cadence OrCAD, Proteus EDA/CAD, C, C++, Java
- Microsoft Office, LaTeX, Kali Linux

## Research project list

Financing institution /Collaborators	Project title	Period	Project role
EDF - Division Technique Générale Grenoble	Système Intelligence Artificielle pour la classification des fonctionnements des machines à partir des transitoires électriques	2018-2019	Gipsa-Lab project responsable
Institut Carnot LSI	UTHIM – Ultrasonic Tomography for Hydro Instationarities Monitoring	2017	Gipsa-Lab algorithms implementation responsable
SATT Linksium	MOTHRYS : Système de monitoring des transitoires hydrauliques	2016-2018	Member
SATT Linksium	TRANSLOCATOR : Localisation des sources de transitoires électriques	2013-2016	Gipsa-Lab experimental part responsable
FUI Tennerdis et Minalogic C-S ; Partenaires : C-S, EDF, CEA LETI, CYBERIO, ATIM.	Smart Hydro Monitoring, méthodes multi-capteurs pour la mesure précise des profils de vitesse d'écoulement	2012-2016	Member
EDF, CG38, CYBERIO	Systèmes acoustiques d'écoute passive en milieu sous-aquatique et aérien	2011-2015	Gipsa-Lab project responsable
Institut Carnot « Energies du Futur », G2Elab, CEA	Localisation d'arcs électriques – ARC LOCATOR	2011-2015	Member

## Publications

### 1. International conferences & journals

- Denis Stanescu, Angela Digulescu, Cornel Ioana, Alexandru Serbanescu, “A Novel Approach for Characterization of Transient Signals Using the Phase Diagram Features”, *COMCAS 2021*, Tel Aviv 1-3 November 2021.
- Razvan Scripcaru, Denis Stanescu, Dragos Nastasiu, Cornel Ioana, Angela Digulescu, Ali Mansour, David Abeza, “Digital modulation characterization using the phase diagram analysis”, *9th Recurrence Plot Symposium*, Lublin, 22-24 September 2021
- Denis Stanescu, Angela Digulescu, Cornel Ioana, Alexandru Serbanescu, “Low complexity acoustic positioning imaging system of underwater objects”, *OCEANS 2021*, San Diego, 20-23 September 2021.
- Denis Stanescu, Dragos Nastasiu, Cornel Ioana, Angela Digulescu and Alexandru Serbanescu, "Low Complexity Acoustic Imaging System Based on Time of Arrivals Dynamic Estimation," *2021 10th Mediterranean Conference on Embedded Computing (MECO)*, 7-10 June 2021.
- Denis Stanescu, Angela Digulescu, Cornel Ioana, Alexandru Serbanescu, “On the existing and new potential methods for Partial Discharge source monitoring in electrical power grids”, *5th International Conference on Smart Trends in Computing and Communications (SmartCom 2021)*, Las Vegas, 15-16 April 2021.
- Denis Stanescu, Angela Digulescu, Cornel Ioana, Alexandru Serbanescu, “Entropy-Based Characterization of the Transient Phenomena-Systemic Approach”, *MATHEMATICS*, Volume: 9 , Issue: 6 , Article Number: 648, Published: MAR 2021.
- Annamaria Sârbu, Simona Miclăuş, Angela Digulescu, Paul Bechet, “Comparative Analysis of User Exposure to the Electromagnetic Radiation Emitted by the Fourth and Fifth Generations of Wi-Fi Communication Devices”, *International Journal of Environmental Research and Public Health 2020*, 17(23), 8837.
- Dragoş Nastasiu, Răzvan Scripcaru, Angela Digulescu, Cornel Ioana, Raymundo De Amorim, Jr., Nicolas Barbot, Romain Siragusa, Etienne Perret, Florin Popescu, “A New Method of Secure Authentication Based on Electromagnetic Signatures of Chipless RFID Tags and Machine Learning Approaches”, *SENSORS 2020, Volume: 20*, Issue: 21, Article Number: 6385.
- Angela Digulescu, Cristina Despina-Stoian, Denis Stanescu, Florin Popescu, Florin Enache, Cornel Ioana, Emanuel Radoi, Iulian Rincu, Alexandru Serbanescu, “New Approach of UAV Movement Detection and Characterization Using Advanced Signal Processing Methods Based on UWB Sensing”, *SENSORS 2020 Volume: 20* Issue: 20 Article Number: 5904.
- Răzvan Scripcaru, Dragoş Nastasiu, Angela Digulescu, Denis Stănescu, Cornel Ioana, and Alexandru Şerbănescu, „On the Potential of Phase Diagram Analysis to Identify the Wide Band Modulations”, *13th International Conference on Communications (COMM)*, Bucharest, Romania, 2020.
- Cristina Despina-Stoian, Angela Digulescu-Popescu, Şerbănescu Alexandru, Roua Youssef and Emanuel Rădoi, „Comparison of Adaptive Filtering Strategies for Self-Interference Cancellation in LTE Communication Systems”, *13th International Conference on Communications (COMM)*, Bucharest, Romania, 2020.

- Denis Stanescu, Cornel Ioana, Angela Digulescu, Alexandru Serbanescu, “High rate acoustic imagery for underwater object classification in dynamic configuration”, *OCEANS19 MTS IEEE*, Seattle, 2019.
- Angela Digulescu, Cornel Ioana, Alexandru Serbanescu, “Phase Diagram-Based Sensing with Adaptive Waveform Design and Recurrent States Quantification for the Instantaneous Frequency Law Tracking”, *SENSORS, Volume: 19*, Issue: 11, Article Number: 2434, Published: JUN 1 2019.
- Georgiana Rosu, Angela Digulescu, Ion Candel, Alexandru Serbanescu, Anisia Culea-Florescu, Carmina Miuta, Octavian Baltag, “The MCG Filtering Based on the Phase Diagram Representation Domain”, *2018 12th International Conference on Communications (COMM)*, 14-16 June 2018, Bucharest.
- Angela Digulescu, Cornel Ioana, Ion Candel, Alexandru Serbanescu, “On the Recognitions Capabilities of Modulated Signals in Phase Diagram Domain”, *2018 12th International Conference on Communications (COMM)*, 14-16 June 2018, Bucharest.
- Angela Digulescu, Alexandru Serbanescu, Ion Candel, Cornel Ioana, “On the extension of acoustic flow metering devices to monitor underwater transient phenomena”, *OCEANS MTS/IEEE 2018*, Charleston, U.S.A, October 22-25, 2018.
- Ion Candel, Cornel Ioana, Angela Digulescu, Carmen Badina, “On the Extension of Acoustic Flow Metering Devices to Monitoring of Transient Phenomena”, *29th IAHR Symposium on Hydraulic Machinery and Systems*, Kyoto, Japan, 16-21 September 2018.
- Angela Digulescu, Cornel Ioana, Ion Candel and Alexandru Serbanescu, “Exploring the properties of the phase diagram domain for the Instantaneous Frequency Law estimation”, *2018 41st International Conference on Telecommunications and Signal Processing (TSP)*, July 4-6, 2018, Athens, Greece.
- Alexandru Serbanescu, Cornel Ioana, Angela Digulescu, “Overview of our Recent Results in Signal Analysis Using Recurrence Plots”, *REVUE ROUMAINE DES SCIENCES TECHNIQUES-SERIE ELECTROTECHNIQUE ET ENERGETIQUE*, Volume: 63 Issue: 2 Pages: 172-177 Published: APR-JUN 2018.
- Angela Digulescu, Costin Vasile, Cornel Ioana, Alexandru Șerbănescu, Gabriel Vasile, Jérôme Mars, „Instantaneous Frequency Law tracking using signal's representation in phase diagram domain”, *22nd International Conference on Digital Signal Processing*, August 23-25, London, United Kingdom.
- Alexandru Sandu, Angela Digulescu, Cornel Ioana, Ion Candel, Alexandru Șerbănescu, Petrică Ciotirnae, „Underwater acoustic object imaging using spatial matched filtering”, *OCEANS '17 MTS/IEEE Anchorage*, Alaska, USA, September 18 – 22th, 2017.
- Irina Murgan, Angela Digulescu, Ion Candel, Cornel Ioana, Anizia-Luiza Culea-Florescu, Alexandru Șerbănescu, „Multimodal Sensing of Erosive Cavitation Phenomena”, *OCEANS '17 MTS/IEEE Anchorage*, Alaska, USA, September 18 – 22th, 2017.
- Costin Vasile, Angela Digulescu, Cornel Ioana, „Electrical Fault Characterization by Hough Transform of Phase Diagram Information”, *IEEE Conference on Microwaves, Communications, Antennas, Electronic Systems (COMCAS 2017)*, 13-15 November, Tel Aviv, Israel.
- Costin Vasile, Cornel Ioana, Angela Digulescu, Ion Candel, „Electromagnetic and acoustic bimodality for the detection and localization of electrical arc faults” Proc. SPIE 10010, Advanced Topics in Optoelectronics, Microelectronics, and Nanotechnologies VIII, 1001004 (December 14, 2016).

- Irina Murgan, Angela Digulescu, Ion Candel, Cornel Ioana, “Compensation of position offset of acoustic transducers using compressive sensing concept”, *OCEANS 2016 MTS/IEEE Monterey*, Sep 2016, Monterey, United States. pp.1-4, 2016.
- Angela Digulescu, Cornel Ioana, Florentina Bunea, Adrian Nedelcu, Ion Candel, Gabriel Vasile and Alexandru Serbanescu, “Cavitation characterization using wide band signals in an acoustic active sensing system”, *OCEANS16 MTS IEEE Monterey*, California, USA, September 19-23th, 2016.
- Irina Murgan, Ion Candel, Cornel Ioana, Angela Digulescu, Florentina Bunea, Gabriel Ciocan, Andrei Anghel," Flow velocity profiling using acoustic time of flight flow metering based on wide band signals and beamforming techniques", *28th IAHR symposium on Hydraulic Machinery and Systems, IAHR Grenoble* July 4-8th, 2016.
- Angela Digulescu, Irina Murgan, Ion Candel, Florentina Bunea, Gabriel Ciocan, Diana Maria Bucur, Georgiana Dunca, Cornel Ioana, Gabriel Vasile, Alexandru Serbanescu," Cavitating vortex characterization based on acoustic signal detection", *28th IAHR symposium on Hydraulic Machinery and Systems, IAHR Grenoble* July 4-8th, 2016.
- Angela Digulescu, Irina Murgan, Cornel Ioana, Ion Candel, Alexandru Serbanescu, "Applications of Transient Signal Analysis using the concept of recurrence plot analysis", *Recurrence Plots and Their Quantifications: Expanding Horizons, Springer Proceedings in Physics*, 2016.
- Cindy Bernard, Angela Digulescu, Alexandre Girard, Cornel Ioana, "Multi-lag phase diagram analysis for transient signal quantification", *Recurrence Plots and Their Quantifications: Expanding Horizons, Springer Proceedings in Physics*, 2016.
- Angela Digulescu, Cindy Bernard, Elena Lungu, Ion Candel, Cornel Ioana, Gabriel Vasile, "Transient signal analysis using multi-lag phase-space analysis", *IEEE International Conference on Microwaves, Communications, Antennas and Electronic Systems (COMCAS)*, Tel Aviv, Israel, 2-5 November 2015.
- Angela Digulescu, Cindy Bernard, Elena Lungu, Ion Candel, Cornel Ioana, "High-speed sensing for object detection in underwater bi-static acoustic paths", *OCEANS'15 MTS/IEEE Conference*, USA, Washington, 2015.
- Cornel Ioana, Ion Candel, Angela Digulescu, “Distributed array of cooperating acoustic sensors using local time-frequency coherence analysis”, *OCEANS'15 MTS/IEEE Conference*, USA, Washington, 2015.
- Mirel Paun, Angela Digulescu, Razvan Tamas, Cornel Ioana,"Electric arc localization based on antenna arrays and MUSIC direction of arrival estimation ", *SPIE Proceedings Vol. 9258: Advanced Topics in Optoelectronics, Microelectronics, and Nanotechnologies VII*, February 2015
- Alexandru Serbanescu, Cornel Ioana, Adrian Diconu, Angela Digulescu, “Between two engineering ages: of information and complex systems, professional research is based on a team work!”, *7th International Conference on Electronics, Computers and Artificial Intelligence (ECAI)*, 25-27 June 2015, Bucharest, Romania.
- Eric Larose, Anne Obermann, Angela Digulescu, Thomas Planes, Jean-Francois Chaix, Frederic Mazerolle, Gautier Moreau, "Locating and characterizing a crack in concrete with LOCADIFF:a four-point bending test", *The Journal of the Acoustical Society of America*, 2015.
- Angela Digulescu, Teodor Petrut, Ion Candel, Florentina Bunea, Georgiana Dunca, Diana Maria Bucur, Cornel Ioana, Alexandru Serbanescu, "Rotational Vortex Rope detection using Recurrence Plot Analysis", *MTA Review, Vol. XXV, No.1, Mar. 2015*, pp. 5-16, ISSN 1843-3391.
- Angela Digulescu, Ion Candel, Cornel Ioana, Gabriel Vasile, Georgiana Dunca, Diana Maria Bucur, Alexandru Serbanescu, " Water hammer effect characterization using an

acoustic signal processing approach", *The 9th International Symposium on Advanced Topics in Electrical Engineering*, May 7-9, 2015, Bucharest, Romania.

- Angela Digulescu, Teodor Petrut, Ion Candel, Florentina Bunea, Georgiana Dunca, Diana Maria Bucur, Cornel Ioana, Alexandru Serbanescu, "On the vortex parameter estimation using wide-band signals in active acoustic system", *OCEANS'14 MTS/IEEE Conference*, Taipei, Taiwan, 2014.
- Angela Digulescu, Ion Candel, Florentina Bunea, Diana Bucur, Cornel Ioana, Teodor Petrut, "Underwater object tracking using time-frequency signatures of acoustic signal", *OCEANS'14 MTS/IEEE Conference*, Taipei, Taiwan, 2014.
- Angela Digulescu, Teodor Petrut, Cindy Bertrand, Ion Candel, Cornel Ioana, Alexandru Serbanescu, "Advanced signal processing techniques for detection and localization of electrical arcs", *The 10<sup>th</sup> International Conference on Communications*, Bucharest, Romania, 2014.
- Angela Digulescu, Mirel Paun, Costin Vasile, Daniela Deacu, Cornel Ioana, Razvan Tamas, "Electrical arc surveillance and localization system based on advanced signal processing techniques", *IEEE International Energy Conference*, Dubrovnik, Croatia, 2014.
- Ion Candel, Angela Digulescu, Cornel Ioana, Gabriel Vasile, "Adaptive waveforms for flow velocity estimation using acoustic signals", *22<sup>nd</sup> European Signal Processing Conference*, Lisbon, Portugal, 2014.
- Cornel Ioana, Angela Digulescu, Alexandru Serbanescu, Ion Candel, Florin-Marian Birleanu, "Recent advances in non-stationary signal processing based on Recurrence Plot Analysis concept", *Translational Recurrences. From Mathematical Theory to Real-World Applications, Springer Proceedings in Mathematics & Statistics*, 2014.
- Angela Digulescu, Ion Candel, Jawad Dahmani, Cornel Ioana, Vasile Gabriel, "Electric Arc Locator in Photovoltaic Power Systems Using Advanced Signal Processing Techniques", *55th International Symposium ELMAR-2013*, Zadar, Croatia, 2013.
- Florin Birleanu, Alexandru Serbanescu, Angela Digulescu, "Overview of recent results in recurrence plot analysis of signals", *2013 International Conference on Electronics, Computers and Artificial Intelligence*, Pitesti, Romania, 2013.
- Bogdan Hurezeanu, Mihaela Ungureanu, Angela Digulescu, Alexandru Serbanescu, Hariton Costin, Rodica Strungaru, "Fetal heart rate variability study with recurrence plot analysis", *4th IEEE International Conference on E-Health and Bioengineering (EHB)*, Iasi, Romania, 2013.
- Angela Digulescu, Elif Tuba Celik, Alexandru Serbanescu, Octavian Fratu, Simona Halunga, "Modulation Detection In Wireless Sensor Networks using Recurrence Plot Analysis", *Global Wireless Summit 2013*, Atlantic City, New Jersey, USA, 2013.
- Ion Candel, Angela Digulescu, Cornel Ioana, Alexandru Serbanescu, Emil Sofron, "Optimization of partial discharge detection in high voltage cables based on advanced signal processing techniques", *11th International Conference on Information Sciences, Signal Processing and their Applications*, Montreal (Quebec), Canada, 2012.
- Elif Tuba Celik, Angela Digulescu, Bogdan Hurezeanu, Madalian Mazilu, "Fetal ECG representation using Recurrence Plot Analysis", *6th International Conference on Application of Information and Communication Technologies*, Tbilisi, Georgia, 2012.
- Ion Candel, Angela Digulescu, Alexandru Serbanescu, Emil Sofron, "Partial Discharge Detection in High Voltage cables using Polyspectra and Recurrence Plot Analysis", *9th International Conference on Communications*, Bucharest, Romania, 2012.

## 2. Technical reports

- Angela Digulescu, Cornel Ioana, Guy d'Urso, „*Détection, Localisation et Quantification des fuites sous faible différence de pression*”, deliverable EdF, 2014.
- Cornel IOANA, Angela DIGULESCU, „*Analyse fréquentielle de la puissance électrique consommée par les servomoteur du Parc*”, deliverable EdF, 2018.

### 3. Disertation Thesis

- Angela Digulescu, “Localization system of transitory signal sources in acoustic environment”, *University POLITEHNICA of Bucharest*, July 2013.

### 4. PhD Thesis

- Angela Digulescu “Characterization of dynamic phenomena based on the signal analysis in phase diagram representation domain”, *DOCTEUR DE LA COMMUNAUTE UNIVERSITE GRENoble ALPES*, préparée dans le cadre d'une cotutelle entre la Communauté Université Grenoble Alpes et l'Académie Technique Militaire de Bucarest, January 2017.

### 5. Books

- A. DIGULESCU-POPESCU, ANALIZA SEMNALELOR TRANZITORII UTILIZÂND METODA RECURENȚELOR, București : Editura Academiei Tehnice Militare Ferdinand I, 2020, Cod CNCISIS 158, ISBN 978-973-640-317-0
- P. CIOTIRNAE, C.I. RINCU, A. DIGULESCU-POPESCU, Sisteme de comutație și transport de bandă largă, București : Editura Academiei Tehnice Militare, 2017, Cod CNCISIS 158, ISBN 978-973-640-266-1
- A. DIGULESCU POPESCU, Îndrumar de laborator la cursul de "Circuite integrate analogice", București : Editura Academiei Tehnice Militare, 2016, Cod CNCISIS 158, ISBN 978-973-640-254-8

### Languages

- Romanian (native)
- English (intermediate)
- French (intermediate)