

Curriculum Vitae – Josiane Zerubia

Senior researcher (DR1), INRIA

Head of the AYIN research team (2012-2016)

Education

- Sept. 1994 **Habilitation**, *Contribution to modeling and statistical analysis of signals*, from the **University of Nice Sophia-Antipolis**, France.
- Oct. 1986 - July 1988 **PhD**, *Noisy Signals Representation and Processing*, from the **University of Nice Sophia-Antipolis**, France.
- Oct. 1984 - Oct. 1986 **Doctor of Engineering degree**, *Signal modeling from noisy observations, application to speech enhancement*, from the **University of Nice Sophia-Antipolis**, France.
- Oct. 78 - July 1981 **Engineering degree** (MSc degree from the Department of Electrical Engineering) at **ENSIEG, INP Grenoble**, France, Majors: automatic control and signal processing
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Career at INRIA

- 2002 - **Director of Research (1st class)**, INRIA, scientific head of the ARIANA team to 2011, scientific head of the AYIN team from 2012 to 2016
- 1995 - 2002 **Director of Research (2nd class)**, INRIA, scientific head of the PASTIS team from mid-1995 to end 1997, scientific head of the ARIANA team from 1998
- 1991 - 1995 **Junior Scientist (1st class)**, INRIA, permanent head of the PASTIS team from 1994 to mid-1995
- 1989 - 1991 **Junior Scientist (2nd class)**, INRIA
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Publications

Books	3
Books chapters	12
Journals	86
Conferences publications	248
Research reports	94
Citation indexes	
• h	44

- i10 154
- RG score 39.71

Editorial activities

- 2007 - Member of the **editorial board of "Foundation and Trends in Signal Processing"** - Now Publisher -
- 2006 - **Associate editor** of the webzine **"Earthzine"** (IEEE CEO and GEOSS)
- 1998 - Member of the **editorial board of the journal "RFPT"** of the French Photogrammetry and Remote Sensing Society (SFPT)
- 2004 - March 2013 Member of the **editorial board of IJCV**
- 2003 - 2006 **Area editor of IEEE Trans. on IP** (in charge of 12 Associate editors)
- 2003 **Guest co-editor of a special issue of IEEE Trans. on PAMI** on energy minimization methods in computer vision and pattern recognition
- 1998 - 2002 **Associate editor of IEEE Trans. on IP**

IEEE activities

- 2008 - 2013 Member of the **IEEE IVMSP TC** (IEEE SP Society)
- 2004 - 2012 Member of the **IEEE BISP TC** (IEEE SP Society)
- 2002 - 2004 Member-at-large of the **Board of Governors of the IEEE SP Society**
- 1997 - 2003 Member of the **IEEE IMDSP TC** (IEEE SP Society)

Other activities

- 2016 - Member of the **scientific council** of UCA-Jedi Idex Academy of Excellence 3
- 2016 - Member of the **center committee** of INRIA-SAM
- 2014 - Member of the **Board of Governors** of SFPT
- 2011 Member of the **Gilles Kahn PhD Prize committee** (French Academy of Science/SIF)
- 1995 - 2016 Member of the **project committee** of INRIA-SAM
- 1999 - 2001 President of the **doctoral committee** of INRIA-SAM
- 1997 - 1999 Member of the **fellowship committee** of INRIA-SAM

1998 - 2013 Member of **several recruitment committees** for permanent positions at INRIA (CR2, CR1, head of SAEPR)

Plenary talks

2016 Signal, Image, Video and Communications Symposium **ISIVC'16** (Tunis, Tunisia)

2011 "Journées de Statistiques" **JDS'11**, French Statistical Society (Tunis, Tunisia)

 Workshop on Computer Vision for Remote Sensing of the Environment **CVRS'11** (at **ICCV'11**, Barcelona, Spain)

2010 **PHARES'10** on Random Processes for Signal and Image modeling (La Manouba, Tunisia)

2009 ISPRS workshop on Urban Remote Sensing **CMRT'09** (Paris, France)

2008 International conference **ACIVS'08** (Juan-les-Pins, France)

2002 International conference EURASIP/IEEE **EUSIPCO'02** (Toulouse, France)

Invited long talks in specialized workshops

May 2014 "**Shape and Image Modeling and Analysis**" **SIMA'14** organized by the **Technion** (Ein-Gedi, Israel)

Sept. 2013 "**Imaging in Geospatial Applications**" organized by the Institute of Mathematics and its Applications (**IMA**) and by the Geospatial National Intelligence Agency (**GNA**) (Minneapolis, USA)

April 2000 "**Stochastic Geometry and Spatial Statistics**" organized by **EURANDOM** (Eindhoven, The Netherlands)

Conference organization

Member of the organizing committees of the conferences below and:

2020 **Scientific advisor** to congress director of **ISPRS'20** (Nice, France)

2017 **GRETSI'17** Symposium (Juan les Pins, France)

2015 **Chair of the workshop** "Stochastic Geometry and Big Data" (Sophia-Antipolis, France)

Co-chair of plenary talks at EURASIP/IEEE **EUSIPCO'15** (Nice, France)

General chair of the workshop "Earthvision" at IEEE **CVPR'15** (Boston, USA)

2014 **Tutorial co-chair** of IEEE **ICIP'14** (Paris, France)

2011	Publicity chair of IEEE ICIP'11 (Brussels, Belgium)
2008	Co-chair of the special sessions at IEEE ISBI'08 (Paris, France)
2006	Co-chair of the special sessions at IEEE ICASSP'06 (Toulouse, France)
2003	Scientific program chair of a workshop on Photogrammetry and Remote Sensing for Urban Areas " Pixels et Cités " (Marne la Vallée, France) Co-chair of the workshop on "Energy Minimization Methods in Computer Vision and Pattern Recognition" EMMCVPR'03 (Lisbon, Portugal)
2002	Co-chair of the workshop on "Image Processing and Related Mathematical Fields" IPRM'02 (Moscow, Russia)
2001	Co-chair of the workshop on "Energy Minimization Methods in Computer Vision and Pattern Recognition" EMMCVPR'01 (Sophia Antipolis, France)

Visibility aspects

- **Reviewer** of IEEE Trans. on (IT, SP, SMC, PAMI, IP, MI, GRS), IJCV, Pattern Recognition, Signal Processing, CVIU, GMIP, Astrophys. Letters, TS (Traitement du Signal), TSI, RFPT (Revue Française de Photogrammétrie et de Télédétection), GRS Letters
- **Program committee** or/and **session chair** or/and **reviewer** for the conferences below:

2016	ICASSP'16, ICIP'16, ICPR'16, CVPR'16, ECCV'16, EMBC'16, EUSIPCO'16, SPIE-ISPRS'16 "Image and Signal Processing for Remote Sensing", SYNASC'16
2015	ICASSP'15, ICIP'15, EMMCVPR'15, EUSIPCO'15, GRETSI'15, TAIMA'15, SPIE-ISPRS'15 "Image and Signal Processing for Remote Sensing", EMBC'15
2014	ICASSP'14, ISBI'14, ICIP'14, ICPR'14, SPIE-ISPRS'14 "Image and Signal Processing for Remote Sensing"
2013	ICASSP'13, ISBI'13, ICIP'13, EMMCVPR'13, MICCAI'13, TAIMA'13, SPIE-ISPRS'13 "Image and Signal Processing for Remote Sensing", ICPRAM'13, GRETSI'13
2012	ICASSP'12, ISBI'12, ICIP'12, SPIE-ISPRS'12 "Image and Signal Processing for Remote Sensing", ICPRAM'12
2011	ICASSP'11, ISBI'11, ICIP'11, SPIE-ISPRS'11 "Image and Signal Processing for Remote Sensing", ISPA'11, EMMCVPR'11, GRETSI'11, TAIMA'11
2010	ICASSP'10, ISBI'10, ICIP'10, SPIE-ISPRS'10 "Image and Signal Processing for Remote Sensing", ISPRS PCV'10, GEOBIA'10, ICPR'10
2009	GRETSI'09, ACVIS'09, ICASSP'09, ICCV'09, ISBI'09, ICIP'09, EMMCVPR'09, SPIE-ISPRS'09 "Image and Signal Processing for Remote Sensing"
2008	ICASSP'08, ISBI'08, ICIP'08, SPIE-ISPRS'08 "Image and Signal Processing for Remote Sensing", CARI'08
2007	ICASSP'07, ISBI'07, ICIP'07, SPIE-ISPRS'07 "Image and Signal Processing for Remote Sensing", ICCV'07, MICCAI'07, SISP'07, GRETSI'07, TAIMA'07
2006	ICASSP'06, ISBI'06, ICIP'06, SPIE-ISPRS'06 "Image and Signal Processing for Remote Sensing", TAIMA'06, CARI'06, EUSIPCO'06

2005	ICASSP'05, ICIP'05, EMMCVPR'05, SPIE-ISPRS'05 "Image and Signal Processing for Remote Sensing", GRETSI'05, TAIMA'05
2004	ICASSP'04, ICIP'04, ICPR'04, SPIE-ISPRS'04 "Image and Signal Processing for Remote Sensing", CARI'04, MC2QMC'04
2003	ICASSP'03, ICIP'03, EMMCVPR'03, ORASIS'03, Pixels et Cités, GRETSI'03, TAIMA'03, SPIE-ISPRS'03 "Image and Signal Processing for Remote Sensing"
2002	ECCV'02, ICASSP'02, ICIP'02, RFIA'02, EUSIPCO'02
2001	ICASSP'01, ICIP'01, GRETSI'01
2000	ICIP'00, ICPR'00, MCMC'00, ICASSP'00, RFIA'00
1999	ICIP'99, SPIE'99, EMMCVPR'99, GRETSI'99, SemStat'99, ICASSP'99
1998	ICIP'98, SPIE'98, ICASSP'98
1997	EMMCVPR'97, SPIE'97, GRETSI'97
1996	ICIP'96, SPIE'96, COMPARES'96
1995	ICIP'95, IMDSP'95
1994	ECCV'94, RFIA'94
1993	CDC'93, IJCAI'93
1992	ECCV'92, FGCS'92
1991	RFIA'91

Academic projects

- **Coordinator of a research project** on remote sensing funded by EADS/Airbus Group Foundation
- **Principal Investigator of an ANR project** (DIAMOND) on confocal microscopy
- **Principal Investigator of an ARC DeMiTRI** on confocal microscopy
- **Principal Investigator of a COLORS ODEUR** on remote sensing
- **Principal Investigator of several bilateral collaboration projects** in image processing with Russia (NATO, ECONET, Lyapunov Institute), the USA (Associated Team SHAPES, NATO), Hungary (Balaton), Italy (Galileo), the Netherlands (NWO), UK (Alliance), Israel (P2R, AFIRST) and Brazil (CNPq)
- **ARIANA coordinator of 3 EU projects** (MOUMIR, IMAVIS within the 5th Framework, MUSCLE within the 6th Framework)

Academic Mobility (during more than one month)

Aug. – Nov. 2016	Invited researcher (UIUC partial funding) in the Electrical and Computer Engineering Dept. at University of Illinois at Urbana-Champaign (UIUC) in Urbana (9.5 weeks)
Aug. 1999	Invited researcher (ENST/Télécom ParisTech Fellowship) in the Signal and Image Processing Dept. at Telecom ParisTech (ENST) in Paris (5 weeks)

July and Aug. 1997 **Invited researcher** (British Council Fellowship) in the Engineering Dept. at the **University of Cambridge** (7 weeks)

1988 - 1989 **Post-doctoral position** (INRIA Fellowship) at the Signal and Image Processing Institute of **USC** in **Los Angeles** (one year)

Industry

2011 - **Consultant** with **Galderma**

2006 - 2010 **Consultant** with **Sanofi**

2005 - 2011 **Expert in images processing for Earth observation** to CERT "Spatial Systems", nominated by the President of the French Space Agency (**CNES**)

2005 - 2006 **Expert in space imaging** to the technical Director of **CS company**

1989 - 2015 **34 industrial contracts** including 30 as a PI with industries or governmental agencies such as ESA, JRC, ISA, CNES, IGN, BRGM, DGA, TAS/AAS, Aérospatiale, EADS Foundation/Airbus Group Foundation, MBDA, Astrium/Airbus DS, Sagem/Safran, CS, Akka Tech/Silogic, Galderma, L'Oréal, Philips...

1985 - 1987 Participation to an "**Academic and Research**" contract with **IBM** France

1982 - 1984 Research engineer at **Hewlett-Packard** laboratory in **Grenoble**, France, and at HP Labs in **Palo Alto**

Teaching*

2016 - Final year at **ISAE-SUPAERO** in **Toulouse**. *Advanced Techniques for Image Processing* (Coordinator of 30H lecture in French, including 15H taught)

2016 **Summer school SSIMA** in **Bucharest, Romania**. *Skin image illumination modeling and chromophore identification for melanoma diagnosis* (1H lecture in English)

2015 Doctoral School of **Sup'Com Tunis**. *Hierarchical Markovian Models and MCMC Optimization Techniques* (6H lecture in French)

2015 **Summer school SSIMA** in **Sinaia, Romania**. *Image Deconvolution and Denoising for Confocal Microscopy and Marked Point Process in Biological Imaging* (4H lecture in English)

2012 - 2016 **Master 2 SVS-ISAB** at **UNS**. *Digital Image Processing Applied to Biology* (Coordinator of both 25H lecture, including 3H taught, and 25H tutorial, in French)

2012 - 2015 Final year at **ISAE-SUPAERO** à **Toulouse**. *Advanced Techniques for Signal and Image Processing* (Coordinator of 40H lecture in French, including 20H taught) and organization of the students annual tour at INRIA-SAM

2009 - **Master 2 BIOCAMP** at **UNS**. *Deconvolution and Denoising for Confocal Microscopy* (Coordinator of 24H lecture in English, including 12H taught)

2006 - 2011 **Master 1 ENS Lyon** by **UNS** and **ENS Lyon**. *Images Analysis* (Coordinator with Georges Drettakis from INRIA-SAM of 24H lecture in French, including 12H taught)

2008 - 2009 **Master 2 ISI-VIM** at **UNS**. *Random Models in Images Processing* (Coordinator of 21H lecture in French, including 15H taught)

2006 - 2008 Industrial lectures at **SAGEM-Defense** in **Argenteuil** and **Massy**. Course to 10 to 12 research engineers. *Markov Random Fields* (3H lecture in French)

2004 - 2008 **Master 2 IGMMV** at **UNS**. *Stochastic Models in Images Processing* (15H lecture, taught in French)

2002 - 2003 **Master 2 Environnement Tropical et Valorisation de la Biodiversité** at **UAG** in **Pointe-à-Pitre** (French West Indies University). *Remote Sensing and Spatial Imaging* (17H lecture in French)

2002 **INT (Telecom SudParis)**. *Markovian Fields in Space Imaging* (3H lecture in French)

2000 **Spring school of the CNRS** in **La Grande-Motte**. *Markovian Fields in Image Processing* (6H lecture in French)

1999 - 2011 Final year at **ISAE-SUPAERO** in **Toulouse**. *Advanced Techniques for Spatial Imaging* (Coordinator of 40H lecture in French, including 20H taught) and organization of the students annual tour at INRIA-SAM

1998 - 2000 Final year at **Ecole Navale** in **Brest**. *Remote Sensing* (6H lecture in French)

1997 - 2000 Final year at **ENSTA ParisTech** by **UNS** and **ENSTA**. *Remote Sensing* (6H lecture in French)

1997 - 2004 **Master 2 Astrophysique et Sciences de l'Univers** at **UNS**. *Remote Sensing* (15H lecture in French)

1995 - 2004 **Master 2 SICIV** at **UNS**. *Markov Random Fields in Images Processing* (15H lecture in French)

1995 **INT (Telecom SudParis)**. *Hierarchical Markov Random Fields in Image Processing* (6H lecture in French)

1993 **University of Sao Paulo**. *Markovian Fields in Images Processing* (20H lecture in English)

1991 - 1997 **Advanced Master** at **Mines de Paris/X (ISIA)**. *Neural Networks in Image Processing* (3H lecture in French)

1991 **Summer school CIMPA-UNESCO**. *Markov Random Fields in Image Processing* (6H lecture in French)

1990 - 1994 **Master 2 Robotique et Vision** at **UNS**. *Images processing* (12H lecture in French) and *Introduction to Probabilities* (6H lecture in French)

1988	ESSI and EEA Bachelor at UNS. <i>Signal Processing and Electronics</i> (192H tutorial in French)
1985 - 1987	IUT of Nice. <i>Electronics</i> (60H tutorial in French)

* number of hours per year

Supervision and co-supervision

Advisor or co-advisor of **58 Masters students**, 20 interns (both Masters and PhDs) from foreign Universities, **33 PhDs** and **23 Post-docs** from Algeria, Brazil, Canada, China, Egypt, France, Germany, Greece, Hungary, India, Iran, Ireland, Israel, Italy, Ivory Coast, Korea, Mexico, Morocco, Norway, Pakistan, Romania, Russia, Sweden, Tunisia, Turkey, Ukraine, United Kingdom, USA, since 1989.

Softwares

- **6 patents:** patent deposit 0110189 INPI in 2001 (75% INRIA, 25% CNRS); patents OA09437, OA09438 in 2009; OA11016, OA11017 in 2010 and FR1260390 in 2012 (50% INRIA, 50% Galderma)
 - **37 deposits at the APP** between 1989 and 2015
 - **One free software:** FLAMINGO under CeCill-C license
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Media

- Participation in 2013 to a **debate (in French) animated by a journalist**, organized by **SKEMA Business School** (with other partners) on the topic "Technology for Information and Communication (TIC): a revolution for women"
- **Short papers on the blogs** of the web sites of MPT2013 (in French) and MPE2013 (in English): "Les ports vus du ciel" and "Extracting Boats in Harbors from High-resolution Satellite Images"
- **Earthzine interview** in 2009: "La Vie de Josiane Zerubia: A Very Modern Woman of Science"
- Code source (in French) n°42 in 2008 (p 8): "Comptage automatique d'une population de flamants roses"
Code source (in French) n°38 in november 2007 (p 4): "Détection automatique de houppiers par modélisation"
- **Interstices (podcast in French)** in 2008: "Quand le traitement d'images participe à la gestion des ressources naturelles"
Interstices (demo in French) in 2006: "Traitement d'images pour l'évaluation des ressources forestières"
- INRIA Activity Report in 2007 (pp 36-37): "From umbrella pines to... flamingos"
- LISA in May 2007: "Télé-détection et environnement : un exemple de traitement d'images dans le projet ARIANA"

- Ercim News n°95 in October 2013: "Boat extraction in harbors from high resolution satellite images"
Ercim News n°65 in April 2006: "Galaxy Filament Detection using the Quality Candy Model"
Ercim News n°61 in April 2005: "Image Processing for Forest Monitoring"
Ercim News n°50 in July 2002: "Marked Point Processes in Image Analysis"
Ercim News n°46 in July 2001: "Modelling SAR Images of Urban Areas"
- INédit n°43 in March 2004: "Mieux exploiter les images satellitaires ou aériennes"
INédit n°20 in July 1999: "Problèmes inverses en observation de la Terre : le projet Ariana"
- French News TV Channel 2 (**France 2**) **interview** in 1996
- E=m6, **interview in the scientific magazine** of French TV Channel 6 (**M6**), in 1991
- 2 scientific videos made by INRIA in 1995 and 1991

Honors, awards and prizes

2016 - 2017	IEEE SPS Distinguished Lecturer (IEEE Signal Processing Society)
2016	IEEE Clémentina SADUWA Prize for a post-doctoral fellow (advisor)
2011	Best Young Author Journal Paper Award (co-author) of the French Society for Photogrammetry and Remote Sensing (SFPT) journal
2010	SITIS Best Young Author Paper Award (co-author)
2008	IEEE Geoscience and Remote Sensing Society (Europe section) best PhD thesis prize (co-advisor, in collaboration with LIAMA, CAS, in Beijing)
2004	EUSIPCO Best Young Author Paper Award (co-author)
2003	IEEE Fellow
2002	"Chevalier de l'Ordre National du Mérite" (proposed by the French Minister of Research)
1997	British Council Fellowship (7 weeks at the University of Cambridge (Trinity College & Eng. Dept.))
1988	Fellowship of the French Committee of Physics at Ecole Polytechnique (stay in New York)
1987	Fellowship of the French Committee of Physics at Ecole Polytechnique (stay in Beijing)
1987	IBM Academic and Research Fellowship
1982	Rotary Youth Leadership Award
1978	"Société d'Entraide de la Légion d'Honneur" Award
1974	"Prix de la Résistance et de la déportation" , Prize of the city of Antibes

Miscellaneous

Foreign languages: fluent in English (Cambridge Proficiency with honors in 1998, TOEFL in 1988), **German**

Management: several short courses about **team management** from 2007 to 2015 (funded by INRIA), one short course about **long range planning** in 2002 (funded by the BoG of IEEE SPS), one short course about **leadership** at RYLA in 1982 (funded by Rotary International)

First aid: First aid European certificate in 2001, INRIA first aid volunteer since 2000

Areas of interest

- **Mathematics applied to signal and image processing:** inverse problems, regularization, Markov random fields, marked point processes, parameter estimation, statistical learning, optimization
 - **Applications to image processing:** blind deconvolution, blurred or/and noisy image restoration, contour detection, perceptual grouping, object detection and tracking, segmentation, classification, super-resolution, fusion, stereovision, 3D reconstruction
 - **Applications to speech processing:** speech enhancement, speech recognition
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