

Curriculum vitae

Mohamed CHETOUANI Full Professor, Section CNU 61

Born : 4 November 1978

Married, 3 children

Deputy Director of SMART Labex : <http://www.smart-labex.fr>

Institut des Systèmes Intelligents et de Robotique, Université Pierre et Marie Curie, CNRS UMR 7222

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Research interests

- Since 2007
- *Signal-processing and machine learning-techniques* : feature extraction, recognition and fusion.
 - *Social Signal Processing* : inter-personal synchrony, mimicry, detection of multimodal emotion events, machine-learning techniques for human communication dynamics modeling
 - *Social Robotics* : socially assistive robotics, learning for HRI models
 - *Interdisciplinary approaches* : psycho-pathology (Autism, Alzheimer), child psychiatry, clinics, physiology and neurophysiology (EEG, hormones) for social interactions
- 2001-2006 Non-linear speech processing applied to speaker and phoneme recognition

Professional experience

- 2001–2004 **PhD student** *funded by the French Ministry of Higher Education and Research, Université Pierre et Marie Curie*
- 2001–2004 **Temporary teacher** Université Paris-Est Créteil Val de Marne (ex-Paris 12)
- 2005 **Temporary assistant professor** Université Pierre et Marie Curie
- April-May 2005 **Invited researcher** the University of Stirling (Scotland) : Department of Computing Science & Mathematics (Prof. Amir Hussain), Faculty Research Grant 2005.
- Jul. 2005 **Invited researcher** Polytechnic University of Mataro (Barcelona), Signal Processing Group (Prof. Marcos Faundez-Zanuy) European COST 277 (Non-linear Spech Processing)
- Sept. 2005 - Dec. 2006 **Associate Professor, CNU 61 LISIF**, Laboratoire des Instruments et Systèmes d'Ile-de-France, Université Pierre et Marie Curie
- Sept. 2005 - Aug. 2013 **Associate Professor, CNU 61 ISIR**, Institut des Systèmes Intelligents et de Robotique (CNRS), Université Pierre et Marie Curie
- Since sept. 2007 **Adjunct professor** Department of teaching and training of Speech Therapist, Faculty of Medicine
- Sept. 2008 - oct. 2011 **Head of the Artificial Perception and Handicap Research Group** ISIR (7 permanents)
- Since nov. 2011 **Head of IMI2S research group (Interaction, Multimodal Integration and Social Signal** ISIR (8 permanents)
- Dec. 2011 **Accreditation to supervise research / "Habilitation à diriger des recherches"**
Reviewers : A. Vinciarelli, G. Richard, R. Alami. Examiners : P. Bidaud, N. Campbell, D. Cohen, J.L. Zarader Université Pierre et Marie Curie
- Since Sept. 2012 **Director of studies "Licence d'Ingénierie Electronique" (L3)**
- Since Sept. 2012 **Director of studies "Cursus Master d'Ingénierie (CMI)" in Electronics**
- Since Sept. 2013 **Full Professor, CNU 61** Université Pierre et Marie Curie

Education

- June 1998 **DUT in Electrical Engineering and Computer Engineering** *first class honours*
University Paris XIII
- June 1999 **Bachelor of Electrical Engineering** *first class honours* Institut Galilée, Université Paris XIII
- June 2000 **Maîtrise EEA (Electronics, Electrical Engineering, Control)** *first class honours*
Université Pierre et Marie Curie
- June 2001 **DEA Robotics and Intelligent Systems** *first class honours* Université Pierre et Marie Curie
- Dec. 2004 **PhD in Computer Science** *Neural predictive coding for speech feature extraction. Supervisors : J.L. Zarader, B. Gas. Reviewers : F. Bimbot, M. Najim. Examiners : M. Milgram, J.F. Bonastre* Université Pierre et Marie Curie

Summary of scientific and administrative activities

- Deputy Director of SMART Labex, since Sept. 2014. (Director : Raja Chatila) : *Human/Machine/Human Interactions In The Digital Society*. 8 laboratoires : ISIR (coord.), LIP6, LTCI, LIB, L2E, STMS (IRCAM), IJLL, CHART-LUTIN. Education : Masters of Computer Science and Engineering, BSc. in Electronics, Computer Science and Mechanics, 3 Doctoral Schools : EDITE, SMAER and 3C
- Director of studies "Licence d'Ingénierie Electronique" L3 (≈ 90 students)(since Sept. 2012)
- Director of studies "Cursus de Master en Ingénierie en 5 ans" (CMI réseau FIGURE) (since Sept. 2012)
- Head of the IMI2S interdisciplinary research group (Interaction, Multimodal Integration and Social Signal), ISIR (8 permanents) : A. Achard (Ass. Prof., action recognition), K. Bailly (Ass. Prof., facial expressions), L. Chaby (Ass. Prof., Psychology), D. Cohen (MD, Prof., Child Psychiatry), S. Dubuisson (Ass. Prof., Human tracking), O. Grynszpan (Ass. Prof., Human-Computer Interaction for Psychiatry), M. Plaza (CR CNRS, Psychology/Neuroscience) (since Nov. 2011).
- Head of Artificial Perception and Handicap Group (Sept. 2008-Nov 2011) (7 permanents)
- Member of the executive committee of SMART Labex : Laboratoire d'excellence sur les interactions humains machines intelligentes dans la société numérique.
- Co-chair with Catherine Pelachaud (LTCI, Institut Mines Telecom) of the Interfaces and Interactions programme of SMART.
- Elected member of board laboratory of ISIR (2008-2013)
- Elected member of expert commission (CNU 61-63) of UPMC (2006-2011), Université Paris-Est Créteil Val de Marne (2009-2013), Université d'Evry Val-D'Essonne (2010-2013).
- Co-chair of GT5 Human Robotic Systems Interaction of GDR Robotics (CNRS) with Rachid Alami (LAAS) since 2008
- Deputy coordinator of eROBOTICS Topic Group NISR-TG "Natural Interaction with Social Robots" avec Kerstin Dautenhahn (University of Hertfordshire, UK), Vanessa Evers (University of Twente, Netherlands).
- Scientific responsible of 11 projects (FP7, ANR, Fondations).

Summary of teaching activities

- Full Professor, UFR d'ingénierie, CNU 61
- Teaching : signal processing, signals and systems, control, pattern recognition, machine learning, human-robot interaction, perception and modeling of social interactions, electrical engineering, physics for speech therapists (clinicians).

Distribution teaching load since 2004 (ATER + Maître de conférences + Professeur) :

Courses	1201 h eq. TD
TD	552 h eq. TD
TP	795 h eq. TD

Licence	1626 h eq. TD
Master	767 h eq. TD

Summary of educational responsibilities :

- Director of studies "Licence d'Ingénierie Electronique" L3 (≈ 90 students, since Sept. 2012).
- Director of studies "Cursus de Master en Ingénierie en 5 ans" (CMI réseau FIGURE) (Sept. 2012 -2014).
- Teaching responsibilities : Signal and systems (L3 60 to 100 students), Perception and Modeling of Social Interaction (M2 40 students / also in English), Pattern recognition (M2 15 students), Introduction of Electrical Engineering (L1, > 150 students), Physics for speech therapists (> 150 étudiants), "Atelier de Recherche Encadrée" (L1 32 students).
- Member of executive committee of PhD Doctoral School SMAER (Sciences mécaniques, acoustique, électronique & robotique de Paris, ED 391) since January 2014.

Summary of research supervision

- 6 completed thesis : A. Mahdhaoui (2010, with J. Zarader), F. Ringeval (2011, with J. Zarader) et C. Saint-Georges (2011, with D. Cohen), C. Granata (2012, with P. Bidaud), C. Zong (2012, with P. Bidaud and X. Clady), E. Delaherche (2013)
- 7 thesis in progress : L. Cohen (2014, with S. Régnier and S. Haliyo), J. Nicolle (2015, with K. Bailly), S. Michelet (2015, with C. Achard), J. Aigrain (2016, with S. Dubuisson and M. Detyniecki), A. Najar (2016, with O. Sigaud), O. Islas (2016, with R. Chatila), A. Hajlaoui (2017, with S. Essid).
- Training : 24 M2/engineers, 13 M1/projects M2/engineers, 8 Licence
- Supervision of 2 engineers : N. Melchior (10/2011 - 09/2012), M. Avril (0/2013-).
- Supervision of 8 post-doctoral fellowships : S. Boucenna (02/2012-08/2014), S. Anzalone (05/2012-), C. Saint-Georges (01/2012-), S. Pammi (03/2013-06/2013), A. Jouen (07/2013-), H. Li (09/2013-02/2015), H. Salam (01/2014-), A. Varni (01/2015-)

- Co-supervision of 3 clinicians : J. Demouy (Speech therapist, 2009), E. Tilmont (Psychologist, 2012-2014), A. Margot (Medical internship, 2013)

Research grants

Projects as coordinator

- **Emotion, Prosody and Autism** (2006-2011) : Fondation France Telecom.
- **Mamanais (Motherese)** (2007-2011) : Fondation de France. Programme Autisme. Responsable Clinique : David Cohen (Head of the Child and Adolescent Psychiatry Department, Pitié-Salpêtrière Hospital).
- **Child-Computer Interaction** (2008-2010) : Exploiting prosody. Programme Hubert-Curien (PHC). Collaboration with Laboratory of Speech Acoustics.
- **MULTI-STIM** (2010-2013) : Intelligent systems for multi-sensory stimulation of children with developmental disorders. Programme Emergence, UPMC.
- **Labex SMART** (2012-2019) : Human/Machine/Human Interactions In The Digital Society (Deputy Director since Sept. 2014, Director : R. Chatila).

Scientific coordinateur for ISIR

- European action **COST 2102** (2006-2011) : Cross-Modal Analysis of Verbal and Non-Verbal Communication. Coord. : Pr. Anna Esposito (Italy).
- **ROBADOM** (2009-2013) : Impact of a robot "butler" at home on psychological and cognitive state of the elderly with mid cognitive impairment. Coord. : Pr. Anne-Sophie Rigaud (Hôpital Broca). ANR
- **FUI PRAMAD2** (2011-2015) : Assistive Robotic Platform for Elderly people. Programme FUI 11 (Fonds unique interministériel). Coord. : Orange, 279k€(ISIR).
- **FP7 ICT-2011-7 MICHELANGELO** (2011-2015) : Patient-centric model for remote management, treatment and rehabilitation of autistic children, ICT for Health, Ageing Well. Coord : FIMI (Italy).
- **SYNED-PSY** (2012-2015) : Synchrony, early development and psycho-pathology. Coord. David Cohen (SIR, Hôpital de la Pitié-Salpêtrière). ANR Mental Health.
- **A1 :1** (2012-2015) : Interaction with human-size avatars. Coord. Cantoche. Investissements d'Avenir. Développement de l'Economie Numérique : Technologies des contenus numériques.
- **ROMEO2** (2012-2016) : Personal assistant and companion humanoid robot. Coord. Aldebaran Robotics.

Participation to research projects

- European action **COST 277** (2001-2005) : Non-Linear Speech Processing. Coord. Pr. Marcos Faundez-Zanuy.
- **MIRAS** (2008-2012) : Multimodal Interactive Robot for Assistance in Strolling. Coord. par la société ROBO-SOFT. Programme ANR Technologies de la santé.
- **SeNSE** (2013-2017) : Projet Labex SMART : SeNSE, SigNaux Socio Emotionnel. Coord. Catherine Achard (Groupe IMI2S, ISIR).
- **JeMIME** (2013-2017) : Jeu Educatif Multimodal d'Imitation Emotionnelle pour des enfants atteints de troubles envahissants du développement. Programme ANR CONTINT Contenu et Interaction. Coord. Kévin Bailly (Groupe IMI2S, ISIR)
- **FP7 SPENCER** (2013-2016) : Social situation-aware perception and action for cognitive robots. Coord by Kai Arras (University of Freiburg, Germany).

Invited talks (selected)

- **Chetouani M.** - Statistical methods for the characterization of impaired social interactions. *4th COST 2102 International Training School on Cognitive Behavioural Systems*, 2011.
- **Chetouani M.** - Rencontre autour de la robotique : Du signal à l'interaction sociale, *Conférences sciences à cœur*, Université Pierre et Marie Curie, 2012.
- **Chetouani M.** - Social signal processing and personal robotics for psychopathology : signals, communicative acts and behaviors. *20th World Congress of the of the International Association for Child & Adolescent Psychiatry & Allied Professions (IACAPAP)*. Paris, France, 2012.
- **Chetouani M.** - Interpersonal synchrony : social signals and behaviors. *Workshop on Developmental and bio-inspired approaches for social cognition and robotics, IEEE RO-MAN 2012*. Paris 2012.
- **Chetouani M.** - Learning Interpersonal synchrony. *International Workshop on Developmental Social Robotics (DevSoR) : Reasoning about Human, Perspective, Affordances and Effort for Socially Situated Robots. IROS 2013*. Tokyo, Japon, 2013.
- **Chetouani M.** -Modélisation computationnelle de la dynamique de la communication humaine : application à l'autisme. Journée Internationale des Pathologies Emergentes de l'Adolescent et du Jeune Adulte JIPEJAAD, Paris, March 2014.
- **Chetouani M.** - Impaired social interaction and robotics. German-French Worskhop Robotics and Social Science, INNOROBO, Toulouse, March 2014.
- **Chetouani M.** - Interpersonal synchrony : social signal processing and social robotics for revealing social signatures. IDIAP Speaker Series, Martigny, Switzerland, April 15th, 2014.

Honors, awards

- Titulaire de la PIR (Prime d'investissement en recherche) niveau 1 (2009-2013)
- Member of the research team ISIR-LAMIA (Coordinated by K. Bailly (IMI2S-ISIR)) : Best Entry Award for the 2nd International Audio/Visual Emotion Challenge (AVEC), International Conference on Multimodal Interaction 2012 (ICMI'12) (<http://sspnet.eu/avec2012/>).
- Titulaire de la PIR (Prime d'investissement en recherche) niveau 2 (2014-2018)
- Titulaire de la PIL (Prime d'investissement en Licence) (2014-2016)

Service

- PhD committees :
 - Reviewer (10) : P. ROUANET (INRIA Flowers, 2012), H. SALAMIN (School of Computing Science, Université de Glasgow, 2012), Q. LE (LTCI, Institut Telecom ParisTech, 2013), J. M. QUINTAS (ISR, Portugal, 2013), C. CHASTAGNOL (LIMSI, 2013), N. COTE (GREYC, 2013), A. PESARIN (University of Verona, 2014), S. HASNAIN (Univ. Cergy Pontoise, 2014), J. GRIZOU (INRIA Flowers, 2014), T. KRUSE (TUM-LAAS, 2015), L. NGUYEN (EPFL-IDIAP, 2015)
 - Examiner : S. SAINT-AIME (Valoria, 2010), S. LEMAIGNAN (LAAS-TUM, 2012), M. SOURY (LIMSI, 2014).
 - President : C. GABARD (UPMC, 2013).
- HDR committees ("Accreditation to supervise research") : Examiner : S. Dubuisson (LIP6, 2012), President : F. Bevilacqua (IRCAM, 2014)
- Organization of events : General Chair of ISCA/TRW on NonLinear Speech Processing (NOLISP'07), Project Coord. of "Multimodal communication with robots and virtual agents" at eNTERFACE'08, Co-organization of ANNPR'08 : "International Workshop on Artificial Neural Networks in Pattern Recognition", Exhibition at La Ville Européenne des Sciences : "Le Palais des robots. Robot mon ami", Co-organization of PIRSTEC (Prospective interdisciplinaire en réseau pour les sciences et technologies cognitives) : "Autisme et Prosodie : Quelles implications possibles ?", Workshop on Learning for Human-Robot Interaction Modeling at RSS 2010 (Robotics : Science and Systems), Journées Nationales de la Robotique Interactive (JNRI 2011, JNRI 2014), Social signal processing at IACAPAP'12 (International Association for Child and Adolescent Psychiatry and Allied Professions), *WS³P* (Wide Spectrum Social Signal Processing).
- Co-organisation of a Challenge at Interspeech 2013 COMPARE 2013 (Computational Paralinguistics : Social Signals, Conflict, Emotion, Autism).
- Journals : Editorial board (founder) of Cognitive Computation (IF 2013 : 1.1), Guest editor for Speech Communication (Special Issue on Non-Linear and Non-Conventional Speech Processing, 2009), Reviewer for IEEE Trans. on Audio and Speech Processing (3 articles), Speech Communication (Special Issue on Non-Conventional and Non-Linear Speech Processing), Neurocomputing (4 articles), Pattern Recognition (10 articles), Journal of Acoustical Society of America (1 article), Journal on Multimodal User Interfaces, Plos One, IEEE Trans. on Affective Computing, IEEE Trans. on Autonomous and Mental Development.
- Conferences : ICANN'05, WNSP'05 (Workshop on Non-Linear Speech Processing), ICEIS'06 (IEEE International Conference on Engineering in Intelligent Systems), NOLISP'07 '09 '11, NNAM'07 (International Conference on Neural Networks and Associative Memories), International Workshop on Verbal and Nonverbal Communication Behaviours (2007), ICPR'08 '10 '12 '14, (International Conference on Pattern Recognition), WCCI'08 (World Congress on Computational Intelligence), COST 2102 Training schools, JNRR (Journées Nationales de Recherche en Robotique), AVEC 2012 et 2013 (International Audio/Visual Emotion Challenge and Workshop), International Conference on Social Robotics (ICSR 2013), IEEE/ACM Human Robot Interaction (2012-2015), IEEE ICRA, IEEE IROS, ACM International Conference on Multimodal Interaction (ICMI).
- Reviewing for funding agencies : ANR (Since 2008), Natural Sciences and Engineering Research Council (2010), University of Stirling, PIR Longévité et Vieillessement, Cap Digital.

Publications

- 30 articles in international journals et 5 articles in national journals
- 74 international conferences
- 15 invited conferences