

# Nicolas OBIN

*Speech and AI*  
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Nicolas Obin (born 1980) is associate professor (2013) in speech, audio, and music technologies at Sorbonne Université and researcher in the Sciences and Technologies of Music and Sound (STMS) lab at Ircam - Center Pompidou, Paris, France. My main research interests cover speech processing and machine learning with application to modeling of speech prosody, speech synthesis, and voice conversion with applications in sound design, robotics, and computational musicology. I have a PhD. in computer sciences on the modeling of speech prosody and speaking style for text-to-speech synthesis (2011), and a master degree in music, art, and aesthetics (2007). I am passionate and deeply involved in the promotion of speech technologies for creation, art, and culture. As a specialist in speech technologies, I have collaborated with renown artists (Georges Aperghis, Philippe Manoury, Roman Polansky, Philippe Parreno, Eric Rohmer, and André Dussolier), and gives talks and interviews for prestigious French schools (Collège de France, Ecole Normale Supérieure, Science Po, CNIL, AIPPI) and Media (Le Monde, Télérama, Pour la Science, TF1, France 5, Arte).

## Career and Formation

- [ 2013-present ] Associate Professor, Ircam and Sorbonne Université, Paris, France.
- [ 2006-2011 ] PhD. thesis, Ircam-Upmc, MeLos: Analysis and Modelling of Speech Prosody and Speaking Style.
- [ 2005-2006 ] Master in Engineering ATIAM (Acoustics, Signal Processing and Informatics Applied to Music), UPMC. Major of the promotion.
- [ 2006-2008 ] Master in Musicology (Musicology, Arts, Aesthetics), Saint-Denis University. *Pierre Boulez, Franz Kafka: L'écriture de l'irrationnel.*

## Coordination and participation to research programs

### Coordination

- [ 2019-2022 ] Projet Ph2D/IDF MoVE : MOdelling of speech attitudes and application to an expressive conversational agent, in collaboration with PSA : PI
- [ 2017-2021 ] Project ANR TheVoice (voice design for the creative industry): PI. Voice identity conversion, voice casting.
- [ 2015-2016 ] Project EMERGENCE Sorbonne Universités ROUTE (Robot à l'Ecoute, Listening robot) : PI, binaural sound source localization.
- [ 2011-2015 ] Project FEDER Voice4Games (Speech technologies for video games) : PI. Speech levelling and voice casting of expressive speech.
- [ 2006-2008 ] Projet PEPS Automatic learning of a generative model of speech prosody: PI.

### Participation

- [ 2019-2023 ] Projet ANR ARS (Analysis and tRansformation of singing Style) : participation, singing style modelling and transformation
- [ 2014-2017 ] Project ANR ChaNTeR (Real-time controlled digital singing) : participation, singing voice synthesis.
- [ 2007-2011 ] Project ANR Rhapsodie (A reference prosodic corpus of spoken French): participation, responsible for speech to text alignment and prosodic labelling.

[ 2005-2008 ] Project RIAM VIVOS (Creation of expressive voices : multimedia applications): participation, prosody modelling for speech transformation and synthesis.

## PhD supervision and monitoring

### Supervision

- [ 2019-2022 ] Clément Le Moine, MOdelling of speech attitudes and application to an expressive conversational agent, STMS/PSA, programme doctoral Ph2D/IDF, école doctorale informatique, télécommunications et électronique, 2019.
- [ 2019-2022 ] Mireille Fares, Multimodal Modelling of Expressivity and Alignment for Human-Machine Interaction, STMS/ISIR, programme doctoral AI @ Sorbonne Université, école doctorale informatique, télécommunications et électronique, 2019.
- [ 2019-2022 ] Killian Martin, Cognitive control of Rooks' vocalizations, STMS/UMR Physiologie de la Reproduction et des Comportements, ED 549 Santé, Sciences Biologiques et Chimie du Vivant, Université de Tours, 2019.
- [ 2017-2020 ] Lisa La Pietra, The independence of the voice from the XXIème siècle. Ethic et aesthetic of the vocal interpretation from Belcanto to artificial intelligence, co-encadrement avec Giordano Ferrari, Université Saint-Denis, 2017.
- [ 2017-2021 ] Rafael Ferro, Expressive conversion of voice identity, Ircam, Université Pierre et Marie Curie, école doctorale informatique, télécommunications et électronique, 2017.
- [ 2017-2021 ] Mathias Quillot, Voice recommendation by deep learning, LIA/Ircam, Université d'Avignon et des Pays du Vaucluse, 2017.
- [ 2016-2019 ] Maxime Sirbu, Real-time and programmable machine listening, Ircam, Université Pierre et Marie Curie, école doctorale informatique, télécommunications et électronique, 2015.
- [ 2013-2016 ] Olivier Migliore, Analyzing the musical prosody of French punk, rap, and ragga (1977-1992) à l'aide de l'outil informatique, Université Montpellier 3 (PhD in musicology, ED 58 Langues, littératures, cultures, civilisations).

### Member of the monitoring committee

- [ 2018 ] Giacomo Valenti, Efficient and secure recognition of multiple speakers for mobile devices, authentication, personalisation and contextualisation. CIFRE PhD thesis, Eurecom and NXP Semiconductor. Jury member.
- [ 2015-2018 ] Neil Zeghidour, Toward unsupervised speech recognition. Learning of informative and invariant representations. CIFRE PhD thesis, LSCP, Paris Sciences et Lettre / Ecole Normale Supérieure and Facebook A.I Research, ED Cerveau, cognition, comportement.
- [ 2016 ] Olivier Migliore, Analyzing the musical prosody of French punk, rap, and ragga (1977-1992) à l'aide de l'outil informatique, Université Montpellier 3 (PhD in musicology, ED 58 Langues, littératures, cultures, civilisations). Jury member.

## Teaching

**Bachelor's degree** (science et technologies, Sorbonne Université)

[ 2017-present ] Python programming, *Licence 1*, : TD, TP (38h)

[ 2015-present ] Reference teacher, *Licence 1* (12h)

[ 2015-present ] Signals and systems, *Licence 3*, : TD (10h)

**Master's degree** (engineering, Sorbonne Université)

[ 2018-present ] Deep learning, *Master 2* : **co-responsible** (2020-), CM (4h), TP (4h)

[ 2015-present ] Advanced audio processing, *Master 2* : **responsible**, CM, projet (20h)

[ **2014-present** ] Student project, *Master 2* : **co-responsible** (2020-) project monitoring (10h)

[ **2013-2019** ] Information theory, *Master 1* : **responsible** (2013-2019), CM, TD, TP (30h)

[ **2013-present** ] Digital signal processing, *Master 1* : TD, TP (26h)

[ **2013-present** ] Audio signal processing, *Master 1* : **responsible** (2013-2019), CM, TP (22h)

### **Professional formation** (Sorbonne Université)

[ **2018-present** ] Deep learning in practice: 3 days formation, co-responsible and instructor (21h)

### **External interventions**

[ **2016-present** ] Music Technology Program, *Licence*, New-York University (1h)

[ **2015-present** ] Job meetings, *Terminal S*, Lycée Saint-Cyr et autres (1h)

[ **2014-present** ] Human voice and his challenges, *Engineering school*, Télécom ParisTech (1h)

### — Responsibilities

[ **2018** ] Ircam representative for the AI commission and strategy at Sorbonne Université

[ **2017-present** ] Member of the scientific council of the engineering UFR at UPMC

[ **2017** ] Member of the selection committee for the associate professor position at Ircam-UPMC, section 60-61, "multi-physical systems and sound signals"

### — Awards and distinctions

[ **2011** ] Best PhD thesis award, Fondation Des Treilles.

### — Organization of conferences, seminars, workshops...

[ **2019 - 2020** ] NOTATION.S : les écritures de la voix. Co-funder with Antonio Simoes (University of Kansas) and organizer of a series of round tables, Ircam, Paris, France.

[ **2019** ] Sound Design Days (SDD 2019) - first edition: Co-funder et co-responsible, 28-29 november 2019, Ircam, Paris, France. Around 120 participants.

[ **2018** ] Living Lab Supramuros, Avignon theater festival, TheVoice project, 2019 : supervision.

[ **2019** ] Speech, Music and Mind Workshop (SMM 2019) : member of the scientific committee.

[ **2018** ] Living Lab Supramuros, Avignon theater festival, invited speaker, TheVoice project, 2018.

[ **2018** ] "Workshop on Detection, Classification, Localization, and Density Estimation of Marine Mammals" (DCLDE 2018) : member of the scientific committee.

[ **2016** ] Conference "Journées d'Étude de la Parole" (JEP), 300 people, Paris : member of the organization committee, member of the scientific committee.

[ **2011** ] Workshop on "Advances in Speech Technologies", Paris : organizer.

[ **2010** ] Journées Jeunes Chercheurs en Audition, Acoustique musicale et Signal audio (JJCAS), Paris : member of the organization committee.

[ **2008** ] International conferences EMUS (Emotion in MUsic and Speech), Paris (France), Campinas (Brazil), Lyon (France) : member of the organization committee, member of the scientific committee.

### — Reviewing

[ 1 ] Reviewer for the French Research National Agency (ANR, 2008, 2015, 2017)

[ 2 ] Expertise pour l'Agence Nationale de la Recherche et de la Technologie (ANRT, 2018)

## Journals

- [ 1 ] IEEE/ACM Transactions of Audio, Speech, and Language Processing (2013)
- [ 2 ] IEEE Transactions on Affective Computing (2015)
- [ 3 ] Elsevier Speech Communication (2015, 2018 x 2)
- [ 4 ] ACM Journal on Computing and Cultural Heritage (2017)
- [ 5 ] PLOS ONE (2019)
- [ 6 ] Journal of the Acoustic Society of America (2019)
- [ 7 ] Acta Acustica (2017)
- [ 8 ] International Journal of Multimedia Information Retrieval (2017)
- [ 9 ] Elsevier Biomedical Signal Processing and Control (2015)
- [ 10 ] Journal of Speech Sciences (2014)
- [ 11 ] Springer Journal on Language Resources and Evaluation (2012)

## Conferences

- [ 2020 ] IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), ISCA Speech Prosody
- [ 2019 ] IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), ISCA Interspeech, ISCA workshop on Speech, Music, and Mind
- [ 2018 ] IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), ISCA Speech Prosody, International Workshop on Detection, Classification, Localization, and Density Estimation of marine mammals using passive acoustics
- [ 2017 ] ISCA Interspeech, International Symposium on Music Information Retrieval (ISMIR), International Conference on Digital Audio Effects (DAFx),
- [ 2016 ] ISCA Interspeech, Speech Prosody, Journées d'Etude de la Parole (JEP)
- [ 2014 ] Swiss Workshop on Prosody
- [ 2012 ] IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), International Symposium on Music Information Retrieval (ISMIR)
- [ 2008 ] ISCA Speech Prosody

## Artistic

- [ 1 ] Reviewer for the musical residency program at Ircam (since 2011)

## Artistic Diffusion

I am passionate and deeply involved in the promotion of speech technologies for creation, art, and culture. I have collaborated with renowned artists and participated in many productions: composers, musicians, comedians, and film makers (Georges Aperghis, Philippe Manoury, Roman Polansky, Philippe Parreno, Eric Rohmer, and Andre Dussolier). Main selection of artistic collaborations:

- [ 2019 ] "Lullaby experience", by composer Pascal Dusapin, Frankfurter Positionen festival (Frankfurt) and Théâtre 104 (Paris).
- [ 2018 ] "Les guerriers de l'ombre", French documentary directed by Frédéric Schoendoerffer, Canal+. Realistic voice anonymization of secret agents.
- [ 2014-2015 ] "Pourquoi j'ai pas mangé mon père", French movie directed by Jamel Debbouze. Recreation of the voice of the French actor Louis de Funès, by using spectral voice identity conversion.

[ 2014-2015 ] "Juger Pétain", TV documentary directed by Richard Saada, Planète, France 5. Recreation of the voice of Maréchal Pétain and other French personalities of the second world war, by using spectral voice identity conversion.

[ 2013 ] "Aliados", opera by composer Sebastian Rivas, Ircam Manifeste festival.

[ 2012-2013 ] "Marilyn", short movie directed by Philippe Parreno, Fondation Beyeler (2012) et Palais de Tokyo (2013). Recreation of the voice of Marilyn Monroe, by using intonation conversion.

[ 2011 ] "Luna Park", by composer Georges Aperghis, Agora festival (Paris).

[ 2010 ] "Escort Girl", first part of the documentary "L'Europe judiciaire" directed by Olivier Ballande, Maha Productions, France Télévision. Realistic speaker anonymization of individuals implied in criminal investigations.

[ 2009 ] "Hypermusic Prologue", opera by composer Hector Parra, Agora festival (Paris).

## Broad diffusion of the scientific culture

### Exhibitions

[ 1 ] "La Voix" exhibition, Cité des Sciences et de l'Industrie, Paris : member of the organization committee, responsible for the realization of three interactive terminals on voice casting and voice transformation, 2014.

### Public lectures

[ 1 ] Sculpter la voix : algorithmes, IA, et créativité, Sound Design Days, Paris, France, 29 novembre 2019.

[ 2 ] Trucages, deepfake, clonage vocal : en 2020, ne croyez plus vos yeux et vos oreilles, Futurapolis, Toulouse, France, 16 novembre 2019. With Vincent Nozick, associate professor at Paris-Est Marne la Vallée University, and Gueric Poncet, journalist at Le Point.

[ 3 ] Déchiffrée, contrefaite, modifiée : les métamorphoses de la voix, Florence Rosier, Le Monde, 4 novembre 2019.

[ 4 ] Creative industries and AI, invited speaker by Goldsmiths University of London, University of London Institute, France, 21 juin 2019.

[ 5 ] AI and creativity: can AI be creative?, Changing IP in Changing Europe, Trilateral Seminar of the French, German and Polish Groups of AIPPI, Paris, France, 05 avril 2019.

[ 6 ] Assistants, falsification, anonymisation : la voix à l'ère du numérique et de l'IA, CNIL, Paris, France, 15 février 2019.

[ 7 ] La voix et l'IA, Parcours Innovateur ignorant, Sciences Po, Paris, France, 19 octobre 2018.

[ 8 ] Marilyn: histoire de la recréation de la voix d'une icône, Ecole Normale Supérieure, Paris-Saclay, France, 9 octobre 2018.

[ 9 ] Les voix du numérique pour le design sonore et la création artistique, Festival Vino Voce, Saint-Emilion, France, 8-10 septembre 2017.

[ 10 ] Vox ex-machina. La voix et ses doubles numériques, Collège de France, Paris, France, 6 juin 2017.

[ 11 ] La voix fantôme, Exposition Polyphonies, Centre Pompidou, Paris, France, Décembre 2016.

[ 12 ] Voix d'outre-tombe : recréer les voix du passé à partir d'archives sonores, Philharmonie de Paris, Paris, France, Novembre 2015.

[ 13 ] Le futur du traitement de la voix, Future en Seine, Paris, France, Juin 2014.

[ 14 ] Machine théâtrale et nouvelles technologies, Je ne suis pas scientifique, mais... Forum Science, Recherche, et Société - Conservatoire National des Arts et Métiers, Paris, France, Mai 2014.

[ 15 ] Les technologies de traitement de la voix, La Semaine Du Son, Paris, France, Janvier 2014.

### Articles in newspaper

- [ 1 ] À l'Ircam, la voix transformée. Dossier L'économie de la voix Usine Nouvelle, juillet 2019.
- [ 2 ] Les prouesses des assistants vocaux. Dossier Intelligence Artificielle. Ça m'intéresse, février 2019.
- [ 3 ] Comment fabrique-t-on une voix de synthèse ?, La Croix, 22 Janvier 2019.
- [ 4 ] La voix sacrée, dossier voix et IA, Télérama, 16 Janvier 2019.
- [ 5 ] Les chanteurs disparus ressuscités par la high-tech, L'express, 21 Décembre 2018.
- [ 6 ] Des voix de synthèse presque humaines, Pour la Science, Décembre 2016, numéro 470, p. 54-62.
- [ 7 ] Clonage vocal : avec l'Ircam. Juger Pétain : le son et l'image enfin réunis. SonoMag, Mai 2015
- [ 8 ] On va pouvoir ressusciter la voix de Marilyn Monroe, Sciences et Vie, Juin 2015, p. 104-108.
- [ 9 ] J'ai cherché Audrey, la synthèse vocale de mon ordinateur, Rue 89, 5 mai 2015.
- [ 10 ] De Funès dans le film de Debbouze ? Mais c'est la voix de qui ? Rue 89, 8 avril 2015.
- [ 11 ] "Pourquoi j'ai pas mangé mon père" : l'Ircam refait parler Louis de Funès, Sciences et Avenir, 8 avril 2015.

### **Participation to broadcast programs**

- [ 1 ] A l'Ircam, la salle la plus silencieuse au monde dévoile ses secrets, journal télévisé, 20h, TF1, 9 septembre 2016.
- [ 2 ] Donner de la Voix, FutureMag, Arte, 5 décembre 2015.
- [ 3 ] Carte blanche d'Eva Bettan, A'live, France Inter, 18 Juin 2015.
- [ 4 ] La Visite Musicale, Le Magazine de la Santé, France 5, 27 mars 2015.
- [ 5 ] Pianotine, Visite de l'Institut de Recherche sur l'Acoustique et la Musique, Arte, 30 Novembre 2014.
- [ 6 ] Petite Histoire de la Synthèse Vocale, France Culture, 12 Août 2014.
- [ 7 ] L'Informatique cherche ses Voix, France Culture, 11 Août 2014.
- [ 8 ] On a Volé la Voix d'André Dussolier, Le Monde, 7 Juillet 2014.
- [ 9 ] Parler avec la Voix d'un Autre, On n'est pas que des cobayes, France 5, 2014.
- [ 10 ] Voix et Identité, Universcience, Arte Creative, 2014.
- [ 11 ] Vers une autre Voix, France Culture Plus, 2014.
- [ 12 ] Les Intonations, France Culture Plus, David Christoffel, 2013.

### **Publications**

I am the author of 6 journal papers, 4 book chapters, and about 60 conference papers whose most are top international conferences in the domain of speech and audio research. All my publications are peer-reviewed, except the book chapters for which I have been invited.

My publication indexes: **h-index: 17, i10-index : 27** (source google scholar, 01/2020)).

### **Articles in peer-reviewed journals (rank A)**

- [ 1 ] L. Benaroya, N. Obin, M. Liuni, A. Roebel, W. Rauml, S. Argentieri (2018). Binaural Localization of Multiple Sound Sources by Non-Negative Tensor Factorization. IEEE/ACM Transactions on Audio, Speech and Language Processing, en cours de publication. Facteur d'impact : 2.491
- [ 2 ] N. Obin, A. Roebel (2016). Similarity Search of Acted Voices for Automatic Voice Casting. IEEE/ACM Transactions on Audio, Speech and Language Processing, vol. 24, no 9, p. 1638-1647, September 2016. Facteur d'impact : 1.877

- [ 3 ] N. Obin, P. Lanchantin (2015). Symbolic Modelling of Speech Prosody: From Linguistics to Statistics. IEEE/ACM Transactions on Audio, Speech and Language Processing, vol.23, no. 3, p. 588-599, March 2015. Facteur d'impact : 1.877

#### **Articles in peer-reviewed journals (others)**

- [ 4 ] M. Avanzi, N. Obin, A. Lacheret and B. Victorri (2011). Vers une modélisation continue de la structure prosodique. Le cas des proéminences accentuelles. Journal of French Languages Studies, Vol. 1 (21), p. 53-71, 2011.

#### **Articles in peer-reviewed journals (French)**

- [ 5 ] O. Migliore, N. Obin, J.Bresson (2019). Outils et méthodes de transcription pour l'analyse de l'interprétation vocale dans le rap :l'exemple d'IAM concept. Revue Musimédiane [en ligne], Moreno Andreatta [dir.], 2019.
- [ 6 ] G. Beller, C. Veaux, G. Degottex, N. Obin, P. Lanchantin and X. Rodet (2009). IrcamCorpusTools : plateforme pour les corpus de parole. Traitement Automatique des Langues, Vol. 3 (49), 2009.

#### **Article in peer-reviewed conferences (international, rank A)**

Source : <http://www.conferenceranks.com>

- [ 1 ] C. Robinson, N.Obin, A. Roebel (2019). Sequence-To-Sequence Modelling of F0 for Speech Emotion Conversion, International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Brighton, UK, 2019.
- [ 2 ] D. Bouvier, N.Obin, M. Liuni, A. Roebel (2016). A Source/Filter Model with Adaptive Constraints for NMF-based Speech Separation International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Shanghai, China, 2016.
- [ 3 ] R. Gong, P. Cuvillier, N.Obin, A. Cont (2015). Real-Time Audio-to-Score Alignment of Singing Voice Based on Melody and Lyric Information. Interspeech, Dresden, Germany, 2015.
- [ 4 ] X. Favory, N.Obin, G. Degottex, A. Roebel (2015). The Role of Glottal Source Parameters for High-Quality Transformation of Perceptual Age. International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Brisbane, Australia, 2015.
- [ 5 ] G. Degottex, N.Obin (2014). Phase Distortion Statistics as a Representation of the Glottal Source: Application to the Classification of Voice Qualities. Interspeech, Singapore, Singapore, 2014.
- [ 6 ] N.Obin, A. Roebel, G. Bachman (2014). On Automatic Voice Casting for Expressive Speech: Speaker Recognition vs. Speech Classification. International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Florence, Italy, 2014.
- [ 7 ] N.Obin, F. Lamare, A. Roebel (2013). Syll-O-Matic: an Adaptive Time-Frequency Representation for the Automatic Segmentation of Speech into Syllables. International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Vancouver, Canada, 2013.
- [ 8 ] N.Obin (2012). Cries and Whispers - Classification of Vocal Effort in Expressive Speech. Interspeech, Portland, USA, 2012.
- [ 9 ] J. Lorenzo-Trueba, R. Barra-Chicote, T. Raitio, N. Obin, P. Alku, J. Yamagishi, J. M. Montero (2012). Towards Glottal Source Controllability in Expressive Speech Synthesis. Interspeech, Portland, USA, 2012.
- [ 10 ] M. Avanzi, P. Dubosson, S. Schwab, N.Obin (2012). Accentual Transfer from Swiss-German to French: A Study of "Français Fédéral". Interspeech, Portland, USA, 2012.
- [ 11 ] N. Obin, P. Lanchantin, A. Lacheret and X. Rodet (2011). Reformulating Prosodic Break Model into Segmental HMMs and Information Fusion. Interspeech 2011, Florence, Italy, 2011.
- [ 12 ] N. Obin, P. Lanchantin, A. Lacheret and X. Rodet (2011). Discrete/Continuous Modelling of Speaking Style in HMM-based Speech Synthesis: Design and Evaluation. Interspeech 2011, Florence, Italy, 2011.
- [ 13 ] N. Obin, A. Lacheret and X. Rodet (2011). Stylization and Trajectory Modelling of Short and Long Term Speech Prosody Variations. Interspeech 2011, Florence, Italy, 2011.

- [ 14 ] M. Avanzi, N. Obin, Anne Lacheret-Dujour and B. Victorri (2011). Toward a Continuous Modeling of French Prosodic Structure: Using Acoustic Features to Predict Prominence Location and Prominence Degree. Interspeech 2011, Florence, Italy, 2011.
- [ 15 ] N. Obin, A. Lacheret and X. Rodet. HMM-based Prosodic Structure Model Using Rich Linguistic Context. Interspeech 2010, p. 1133-1136, Makuhari, Japan, 2010.
- [ 16 ] N. Obin, V. Dellwo, A. Lacheret and X. Rodet. Expectations for Discourse Genre Identification: a Prosodic Study. Interspeech 2010, p. 3070-3073, Makuhari, Japan, 2010.
- [ 17 ] N. Obin, X. Rodet and A. Lacheret-Dujour. A Multi-Level Context-Dependent Prosodic Model Applied to Durational Modeling. Interspeech 2009, p. 512-515, Brighton, UK, 2009.
- [ 18 ] N. Obin, A. Lacheret-Dujour, C. Veaux, X. Rodet and A.-C. Simon. A Method for Automatic and Dynamic Estimation of Discourse Genre Typology with Prosodic Features. Interspeech 2008, p. 1204-1207, Brisbane, Australia, 2008.
- [ 19 ] N. Obin, X. Rodet and A. Lacheret-Dujour. French Prominence: A Probabilistic Framework. International Conference on Acoustics, Speech, and Signal Processing (ICASSP), p. 3993-3996, Las Vegas, USA, 2008.

#### **Article in peer-reviewed conferences (international, others)**

- [ 1 ] L. Liu, A. Lacheret-Dujour, N. Obin (2019). Acoustic Modelling and Labelling of Speech Prosody: What's new with SLAM+? International Congress of Phonetic Sciences (ICPhS), Melbourne, Australia, 2019.
- [ 2 ] N.Obin, J. Beliao (2018). Sparse Coding of Pitch Contours with Deep Auto-Encoders. Speech Prosody, Poznań, Poland, 2018.
- [ 3 ] O. Migliore, N.Obin (2018). At the Interface of Speech and Music: A Study of Prosody and Musical Prosody in Rap Music. Speech Prosody, Poznań, Poland, 2018.
- [ 4 ] R. Gong, N. Obin, G. Dzhambazov and X. Serra (2017). Score-Informed Syllable Segmentation for Jingju a Cappella Singing Voice with Mel-Frequency Intensity Profiles. International Workshop on Folk Music Analysis (FMA), Malaga, Spain, 2017.
- [ 5 ] N.Obin, J. Beliao, C. Veaux, A. Lacheret (2014). SLAM: Automatic Stylization and Labelling of Speech Melody. Speech Prosody, Dublin, Ireland, 2014.
- [ 6 ] A. Lacheret, J. Beliao, A. Dister, K. Gerdes, J.-P. Goldman, S. Kahane, N. Obin, P. Pietrandrea, A. Tchobanov (2014). Rhapsodie: a Prosodic-Syntactic Treebank for Spoken French. Language Resources and Evaluation Conference (LREC), Reykjavik, Iceland, 2014.
- [ 7 ] N.Obin, M. Liuni (2012). On the Generalization of Shannon Entropy for Speech Recognition. IEEE workshop on Spoken Language Technology, Miami, USA, 2012.
- [ 8 ] N.Obin, C. Veaux, P. Lanchantin (2012). Making Sense of Variations: Introducing Alternatives in Speech Synthesis. Speech Prosody, Shanghai, China, 2012.
- [ 9 ] N.Obin, M. Avanzi, G. Bordal, A. Bardiaux (2012). Regional Variations of Speech Rhythm in French: In Search of Lost Times. Speech Prosody, Shanghai, China, 2012.
- [ 10 ] G. Bordal, M. Avanzi, N.Obin, A. Bardiaux (2012). Variations in the Realization of the French Accentual Phrase in the Light of Language Contact. Speech Prosody, Shanghai, China, 2012.
- [ 11 ] M. Avanzi, A. Lacheret, N.Obin (2012). Transcription of Prosody in Continuous Speech: Prosodic Encoding the Spoken French Corpus Rhapsodie. Advancing Prosodic Transcription for Spoken Language Science and Technology, LabPhon, Stuttgart, Germany, 2012.
- [ 12 ] P. Lanchantin, S. Farnier, C. Veaux, G. Degottex, N. Obin, G. Beller, Stefan Huber (2011). Vivos Voco: a Survey of Recent Research on Voice Transformations at IRCAM. International Conference on Digital Audio Effects, Paris, France, 2011.
- [ 13 ] N. Obin, M. Avanzi, and A. Lacheret (2011). Transcription of French Prosody: the Rhapsodie Protocole. Interface Discours et Prosodie 2011, Manchester, UK, 2011.



- [ 14 ] M. Avanzi, G. Bordal and N. Obin (2011). Typological Variations in the Realization of French Accentual Phrase. International Congress of Phonetic Sciences (ICPHS), Hong-Kong, China, 2011.
- [ 15 ] N. Obin, P. Lanchantin, M. Avanzi, A. Lacheret-Dujour and X. Rodet (2010). Toward Improved HMM-based Speech Synthesis Using High-Level Syntactical Features. Speech Proosdy 2010, Chicago, USA, 2010.
- [ 16 ] N. Obin, X. Rodet and A. Lacheret-Dujour (2009). A Syllable-Based Prominence Detection Model Based on Discriminant Analysis and Context-Dependency. International Conference on Speech and Computer (SPECOM), p. 97-100, St-Petersburg, Russia, 2009.
- [ 17 ] G. Beller, N. Obin and X. Rodet (2008). Articulation Degree as a Prosodic Dimension of Expressive Speech. Speech Prosody, Campinas, Brazil, 2008.

#### **Article in peer-reviewed conferences (French)**

- [ 1 ] N. Obin , P. Pham, A. Roebel (2018). Conversion d'Identité de la Voix Chantée par Sélection et Concaténation d'Unités Spectrales. Journées d'Etude de la Parole, Aix-en-Provence, France, 4-8 juin 2018.
- [ 2 ] A. Roebel, L. Ardaillon, N. Obin (2018). Expressive Singing Synthesis using an Extended Source Filter Model. Congrès Français d'Acoustique, Le Havre, France, 23-27 Avril 2018.
- [ 3 ] Olivier Migliore, Nicolas Obin (2016). Analyser la prosodie musicale : l'exemple du rap français des débuts (1984-1991), La voix dans les chansons, Paris, France, 2016.
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