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Belgian.
Date of birth : september 3rd, 1972,
Binche (Belgium).

POSITIONS HELD

MAY 2008 –
PRESENT

Faculté Polytechnique de Mons (FPMS), Mons, Belgium.
Senior Researcher. Numediart research programme.

MARCH 2002 – APRIL

2008 **Multitel, Mons, Belgium.**

Group leader of the automatic speech recognition activities at Multitel. This non-profit research organization is also active in the fields of speech synthesis, generic mono and multi-dimensional signal processing, network technologies and fiber optic technologies.

OCT. 2000 – FEBR.

2002 **International Computer Science Instit. (ICSI), Berkeley, California, USA.**
Joint work with Qualcomm, California, USA

Post-doctoral associate. Research/development in the field of distributed speech recognition in noisy environments. Participation to the ETSI Aurora standardization effort (with Prof. Nelson Morgan & Hynek Hermansky).

SEPT. 1995 - SEPT.

2000 **Faculté Polytechnique de Mons (FPMS), Mons, Belgium.**

Researcher with a FRIA grant from the FNRS, the Belgian National Science Agency (august 1995 - june 1999) and research assistant on the Multitel project (july 1999 - september 2000). Research in the field of speech recognition in noisy environments and audiovisual speech recognition (with Prof. Henri Leich and Prof. Hervé Bourlard).

APRIL 1997 – JUNE

1997 **Inst. Dalle Molle d'Intelligence Artif. Percept. (IDIAP), Martigny, Switzerland.**

Intern. Research on audiovisual speech recognition (with Prof. Hervé Bourlard).

DEGREES

JULY 2000

Ph.D., FPMS

Dissertation: “Study and development of multi-band and multi-modal architectures for robust speech recognition”, TCTS Dept.

JUNE 1995

Electrical Engineering Master Degree, FPMS

Dissertation: “Study and development of a pitch-to-MIDI converter”, TCTS Dept.

SELECTED ACCOMPLISHMENTS

- More than 50 scientific publications; 168 non-self citations (according to citeseer, jun 2007).
- Awarded for best paper published in the Speech Communication journal during 2006-2008, for paper “Automatic Speech Recognition and Speech Variability: a Review”.
- Independent expert for the European Commission Institute for Prospective Technological Studies (JRC IPTS): validation of study on The Prospective of Speech-based Interfaces for future Digital Services (mar 2008).
- Guest-editor of special issue “Intrinsic Speech Variation and Speech Recognition” of the Speech Communication journal, 2006.
- Chairman and co-organizer of the “International Tutorial and Research Workshop on Speech Recognition and Intrinsic Variation (SRIV 2006)”, Toulouse, France, May 2006 (40 participants).
- Chairman of special session “Dealing with Intrinsic Variation in ASR” at the International Conference on Acoustic, Speech and Signal Processing, Toulouse, France, May 2006.

- Member of the Ph.D. thesis committee of Ronaldo Messina, “Acoustical Modeling for Speech Recognition: Long Units and Multi-Modeling”, University of Avignon, France, Dec 2005.
- Best system on the ETSI Aurora3 tasks (in-car noisy speech recognition) at the Eurospeech Conference in Genova, 2003.
- Major contributor at ICSI to the “ETSI Aurora” competition, concerned with defining a standard front-end algorithm for distributed speech recognition. In February 2002, our proposal met all the requirements defined for this competition. Collaboration between ICSI, OGI (Portland, Oregon) and Qualcomm (San Diego, California).
- Research work in the field of speech recognition under noisy conditions. This led to a Ph.D. dissertation and a patent application.
- Presentation of several scientific communications at diverse international conferences in the field of signal and speech processing.
- Reviewer on a regular basis for several international scientific publications in the field of signal, speech and image processing: EURASIP/ISCA Speech Communication Journal, EURASIP Journal on Applied Signal Processing, IEEE Signal Processing Letters, IEEE Transactions on Speech and Audio Processing.
- Reviewer for quality assurance plan of the FP6 HUMABIO project (2006, 2007).

MAJOR R&D GRANTS FUNDED + PROJECT PARTICIPATION

- 2007-2012: NUMEDIART (RW): project participant.
- 2006-2008: CARETAKER (EC FP6, IST): project participant (project budget : 4.5 MgEuros)
- 2004-2007: DIVINES (EC FP6, IST): coordination of proposal writing and project management (project budget: 3.6 MgEuros).
- 2004-2007: ALLADIN (EC FP6, IST): workpackage writing (project budget: 4.0 MgEuros).
- 2004-2007: EURAKA MAJORCALL (Eureka framework): workpackage writing and workpackage management (partner budget 0.4 MgEuros).
- 2000-2002: DGTRE ARTHUR (Walloon Regional government, Belgium): workpackage writing.

INTERESTS

- RESEARCH: Speech/Language technologies, their current limitations and opportunities, both on theoretical and practical sides, (statistical) pattern classification, detection, digital signal processing, machine learning, multimodal interaction technologies and sensors, computer music, artificial intelligence.
- SOFTWARE DEVELOPMENT: C, C++, scripting languages, CVS/SVN, Windows, Linux network and cluster administration.
- RESEARCH MANAGEMENT: experience in building international research projects, in research team management, and in intellectual property rights management.

LANGUAGES

French (fluent), English (fluent), Italian (basic skills).

UNDERGRAD STUDENTS ADVISOR

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| 2010 | <ul style="list-style-type: none"> • S. Pierard, “Development of an image representation method based on a visual vocabulary” • S. Huet, “Development of analysis and information retrieval extensions for multimedia players” |
| 2007 | <ul style="list-style-type: none"> • C. Versieux, “Development of standardised plug-ins for audio enhancement and speech transformation” • C. Huet, “Development of a bimodal speech detection system based on audio and lip movement” |
| 2004 | <ul style="list-style-type: none"> • Damien Bachelart, "Multiple sensors speech recognition: combined use of throat and close-talk microphones for improved speech detection and recognition under noisy environments" → results have been published at an international workshop. • Pascale Woodruff, "Gesture-speech multimodal interface: design and implementation of a prototype that synergistically uses automatic speech and |

- handwriting recognition" → results have been published at an international conference.
- Laurent Remmerie, "Speech enhancement for post-production applications: design and development of a text-directed model-based speech enhancement method".
- 2003
- Irving Méreau, "Design and implementation of an indexing/search algorithm for text and speech retrieval of spoken language messages".

SELECTED PUBLICATIONS

- PH.D.
DISSERTATION
1. S. Dupont, Etude et développement d'architectures multi-bandes et multimodales pour la reconnaissance robuste de la parole. PhD thesis, Faculté Polytechnique de Mons, June 2000.
- INTERNATIONAL
PATENTS
2. S. Dupont, "Robust parameters for noisy speech recognition." Patent WO/2001/084537, Intl. Application PCT/BE2001/000072, Nov. 2001.
 3. H. Garudadri, H. Hermansky, L. Burget, P. Jain, S. Kajarekar, S. Sivasdas, S. Dupont, M. Ortuzar, and N. Morgan, "System and method for computing and transmitting parameters in a distributed voice recognition system." Patent WO/2002/061727, Intl. Application PCT/US2002/002625, Aug. 2002.
 4. H. Garudadri, S. Sivasdas, H. Hermansky, N. Morgan, C. Wooters, A. G. Adami, M. C. Benitez Ortuzar, L. Burget, S. Dupont, F. Grezl, P. Jain, S. Kajarekar, and P. Motlicek, "Ditributed voice recognition system utilizing multistream feature processing." Patent WO/2003/094152, Intl. Application PCT/US2003/013389, Nov. 2003.
- BOOK CHAPTERS
5. Juergen Luetin and Stéphane Dupont. Computer Vision, volume 1407 of Lecture Notes in Computer Science, chapter Continuous audio-visual speech recognition, pages 657-673. Springer Berlin / Heidelberg, May 1998. ISBN: 3-540-64613-2.
 6. Thierry Dutoit and Stéphane Dupont, "Speech Processing", in Multi-Modal Signal Processing: Theory and Applications for Human-Computer Interaction, Jean-Philippe Thiran, Ferran Marqués, Hervé Bourlard, ISBN: 978-0123748256, Academic Press, 3:25-62, 2010.
- PUBLISHED
REPORTS
7. Laurent Couvreur et al. "Audio Thumbnailing". In: QPSR of the numediart research program. Ed. by Thierry Dutoit and Benoît Macq. Vol. 1. 2. numediart. 2008. URL: http://www.numediart.org/files/numediart_2008_s2_p06_report.pdf. Pp.: 67–85.
 8. S. Dupont, N. D'Alessandro, T. Dubuisson, C. Frisson, R. Sebbe, J. Urbain, 2008, "AudioCycle : Browsing Musical Loops Libraries", QPSR of the numediart research program, volume 1, n° 4, December 2008.
 9. X. Siebert, S. Dupont, C. Frisson, D. Tardieu, 2009, "MultiMediaCycle: Consolidating the HyForge Framework towards Improved Scalability and Usability", QPSR of the numediart research program, volume 2, n° 4, December 2009.
 10. D. Tardieu, J. Dubois, R. BOSE, S. Dupont, B. Mazarino, S. Hidot, A. Moinet, X. Siebert, G. Varni, A. VISENTIN, 2009, "Video Navigation Tool: Application to browsing a database of dancers'performances", QPSR of the numediart research program, volume 2, n° 3, September 2009.
 11. S. Dupont, T. Dubuisson, J.A. Mills III, A. Moinet, X. Siebert, D. Tardieu, J. Urbain, 2009, "LaughterCycle", QPSR of the numediart research program, volume 2, n° 2, June 2009.
- JOURNAL PAPERS
12. H. Bourlard, S. Dupont, and C. Ris, "Multi-stream speech recognition," (invited paper) CC AI The Journal for the Integrated Study of Artificial Intelligence, Cognitive Science and Applied Epistemology, vol. 15, no. 3, pp. 215-234, 1998.
 13. S. Dupont and J. Luetin, "Audio-visual speech modeling for continuous speech recognition," IEEE Transactions on Multimedia, vol. 2, pp. 141-151, Sept. 2000.

14. C. Ris and S. Dupont, "Assessing local noise level estimation methods," *Speech Communication*, vol. 34, pp. 141-158, Apr. 2001.
15. R. De Mori, O. Deroo, S. Dupont, D. Jouviet, L. Fissore, P. Laface, A. Mertins and C.J. Wellekens, Guest Editors, "Introduction to the Special Issue on Intrinsic Speech Variations," *Speech Communication* (special issue on Intrinsic Speech Variations), vol. 49, no. 10-11, pp. 761-762, 2007.
16. M. Benzeghiba, R. D. Mori, O. Deroo, S. Dupont, T. Erbes, D. Jouviet, L. Fissore, P. Laface, A. Mertins, C. Ris, R. Rose, V. Tyagi, and C. Wellekens, "Automatic speech recognition and speech variability: a review," *Speech Communication* (special issue on Intrinsic Speech Variations), vol. 49, no. 10-11, pp. 763-786, 2007.
17. D. Tardieu, X. Siebert, B. Mazzarino, R. Bose, J. Dubois S. Dupont, G. Varni, A. Visentin, 2010, "Browsing a Dance Video Collection: Dance Analysis and Interface Design", accepted for publication in *Journal of Multimodal User Interfaces*, 2010.

CONFERENCE
PAPERS

18. H. Boulard, S. Dupont, H. Hermansky, and N. Morgan, "Towards subband-based speech recognition," in *Proc. of European Signal Processing Conference (EUSIPCO)*, (Trieste, Italy), pp. 1579-1582, Sept. 1996.
19. H. Boulard and S. Dupont, "A new ASR approach based on independent processing and recombination of partial frequency bands," in *Proc. of Intl. Conf. on Spoken Language Processing (ICSLP)*, (Philadelphia), pp. 422- 425, Oct. 1996.
20. S. Dupont and H. Boulard, "Multiband approach for speech recognition," in *Proc. of ProRISC/IEEE Workshop on Circuits, Systems and Signal Processing*, (Mierlo, The Netherlands), pp. 113-118, Nov. 1996.
21. H. Boulard and S. Dupont, "Sub-band-based speech recognition," in *Proc. of IEEE Intl. Conf. on Acoustics, Speech and Signal Processing (ICASSP)*, (Munich), pp. 1251-1254, Apr. 1997.
22. S. Dupont, H. Boulard, O. Deroo, V. Fontaine, and J.-M. Boite, "Hybrid HMM/ANN systems for training independent tasks: Experiments on phonebook and related improvements," in *Proc. of IEEE Intl. Conf. on Acoustics, Speech and Signal Processing (ICASSP)*, (Munich), pp. 1767- 1770, Apr. 1997.
23. J.-M. Boite, F. Bataille, O. Deroo, S. Dupont, V. Fontaine, C. Ris, and L. Zaroni, "STRUT : Un logiciel complet pour l'entraînement et la reconnaissance de la parole," in *Proc. of Premieres Journees Scientifiques et Techniques FRANCIL*, (Avignon), pp. 41-44, Apr. 1997.
24. S. Dupont, H. Boulard, and C. Ris, "Robust speech recognition based on multi-stream features," in *Proc. of ESCA/NATO Workshop on Robust Speech Recognition for Unknown Communication Channels*, (Pont-à-Mousson, France), pp. 95-98, Apr. 1997.
25. S. Dupont and H. Boulard, "Using multiple time scales in a multi-stream speech recognition system," in *Proc. of European Conf. on Speech Communication and Technology (EUROSPEECH)*, vol. 1, (Rhodes, Greece), pp. 3-6, Sept. 1997.
26. S. Dupont, C. Ris, O. Deroo, V. Fontaine, J.-M. Boite, and L. Zaroni, "Context independent and context dependent hybrid HMM/ANN systems for training independent tasks," in *Proc. of European Conf. on Speech Communication and Technology (EUROSPEECH)*, vol. 4, (Rhodes, Greece), pp. 1947-1950, Sept. 1997.
27. O. Deroo, C. Ris, H. Leich, S. Dupont, V. Fontaine, and J.-M. Boite, "Hybrid HMM/ANN systems for speaker independent continuous speech recognition in french," in *Proc. of ProRISC/IEEE Workshop on Circuits, Systems and Signal Processing*, (Mierlo, The Netherlands), pp. 137-141, Nov. 1997.
28. S. Dupont and J. Luetin, "Continuous audio-visual speech recognition," in *Proc. of European Conf. on Computer Vision*, (Freiburg, Germany), June 1998.
29. S. Dupont, "Reconstruction de données manquantes pour la reconnaissance robuste de la parole dans le cadre des syst`emes hybrides HMM/ANN," in *Proc. of XXIIèmes Journ'ees d'Etude sur la Parole*, (Martigny, Switzerland), pp. 405-408, June 1998.
30. S. Dupont and J. Luetin, "Using the multi-stream approach for continuous audio-visual speech recognition: Experiments on the m2vts database," in *Proc. of Intl. Conf. on Spoken Language Processing (ICSLP)*, paper 0582, (Sydney, Australia), Dec. 1998.

31. S. Dupont, "Missing data reconstruction for robust automatic speech recognition in the framework of hybrid HMM/ANN systems," in Proc. of Intl. Conf. on Spoken Language Processing (ICSLP), paper 0581, (Sydney, Australia), Dec. 1998.
32. S. Dupont and C. Ris, "Assessing local noise level estimation methods," in Proc. of Workshop on Robust Methods For Speech Recognition in Adverse Conditions (Nokia, COST249, IEEE), (Tampere, Finland), pp. 115-118, May 1999.
33. O. Deroo, C. Ris, and S. Dupont, "Context dependent hybrid HMM/ANN systems for large vocabulary continuous speech recognition system," in Proc. of European Conf. on Speech Communication and Technology (EUROSPEECH), vol. 3, (Budapest, Hungary), pp. 1095-1098, Sept. 1999.
34. S. Dupont and L. Cheboub, "Fast speaker adaptation of HMM/ANN automatic speech recognition systems," in Proc. of SPS'2000 Signal Processing Symposium, (Hilvarenbeek, The Netherlands), Mar. 2000.
35. S. Dupont and L. Cheboub, "Fast speaker adaptation of artificial neural networks for automatic speech recognition," in Proc. of IEEE Intl. Conf. on Acoustics, Speech and Signal Processing (ICASSP), vol. 3, (Istanbul, Turkey), pp. 1795-1798, June 2000.
36. L. Couvreur, J.-M. Boite, S. Dupont, C. Ris, and C. Couvreur, "Fast adaptation for robust speech recognition in reverberant environments," in Proc. of Intl. Workshop (ISCA ITRW) on Adaptation Methods for Speech Recognition, (Sophia-Antipolis, France), Aug. 2001.
37. S. Dupont and C. Ris, "Multi-band with contaminated training data," in Proc. of CRAC workshop on consistent and reliable acoustic cues for sound analysis, (Aalborg, Denmark), Sept. 2001.
38. C. Benitez, L. Burget, B. Chen, S. Dupont, H. Garudadri, H. Hermansky, P. Jain, S. Kajarekar, and S. Sivasdas, "Robust ASR front-end using spectral-based and discriminant features: experiments on the aurora tasks," in Proc. of European Conf. on Speech Communication and Technology (EUROSPEECH), (Aalborg, Denmark), pp. 429-432, Sept. 2001.
39. J. Segura, M. Benitez, A. de la Torre, S. Dupont, and A. Rubio, "VTS residual noise compensation," in Proc. of IEEE Intl. Conf. on Acoustics, Speech and Signal Processing (ICASSP), vol. 1, (Orlando, Florida), pp. 409-412, May 2002.
40. A. Adami, L. Burget, S. Dupont, H. Garudadri, F. Grezl, H. Hermansky, P. Jain, S. Kajarekar, N. Morgan, and S. Sivasdas, "Qualcomm-ICSI-OGI features for ASR," in Proc. of Intl. Conf. on Spoken Language Processing (ICSLP), (Denver, Colorado), pp. 21-24, Sept. 2002.
41. S. Dupont and C. Ris, "Robust feature extraction and acoustic modeling at multitel: Experiments on the aurora databases," in Proc. of European Conf. on Speech Communication and Technology (EUROSPEECH), (Gen`eve, Switzerland), pp. 1789-1792, Sept. 2003.
42. S. Dupont, C. Ris, and D. Bachelart, "Combined use of close-talk and throat microphones for improved speech recognition under non-stationary background noise," in Proc. of Intl. Workshop (ISCA ITRW) on Robustness Issues in Conversational Interaction, (Norwich, UK), Aug. 2004.
43. S. Dupont, C. Ris, L. Couvreur, and J.-M. Boite, "A study of implicit and explicit modeling of coarticulation and pronunciation variation," in Proc. of INTERSPEECH, (Lisbon, Portugal), pp. 1353-1356, Sept. 2005.
44. S. Dupont and P. Woodruff, "Bimodal combination of speech and handwriting for improved word recognition," in Proc. of European Signal Processing Conference (EUSIPCO), (Antalya, Turkey), Sept. 2005.
45. L. Couvreur, J.-M. Boite, S. Dupont, and C. Ris, "Confidence measure normalization for robust selection of ASR agents," in Proc. of Intl. Conf. on Speech and Computer (SPECOM), vol. 1, (Patras, Greece), pp. 369-372, Oct. 2005.
46. S. Dupont, C. Ris, O. Deroo, and S. Poitoux, "Feature extraction and acoustic modeling: an approach for improved generalization across languages and accents," in Proc. of IEEE Automatic Speech Recognition and Understanding Workshop (ASRU), (San Juan, Puerto Rico), pp. 29-34, Nov. 2005.
47. M. Benzeghiba, R. D. Mori, O. Deroo, S. Dupont, T. Erbes, D. Jouviet, L. Fissore, P. Laface, A. Mertins, C. Ris, R. Rose, V. Tyagi, and C. Wellekens, "Automatic speech recognition and intrinsic speech variation," in Proc. of IEEE Intl. Conf. on

Acoustics, Speech and Signal Processing (ICASSP), vol. 5, (Toulouse, France), pp. 1021-1024, May 2006.

48. S. Dupont and C. Ris, "Multiple acoustic and variability estimation models for ASR," in Proc. of Intl. Workshop (ISCA ITRW) on Speech Recognition and Intrinsic Variation (SRIV-2006), (Toulouse, France), May 2006.
49. J. Urbain, S. Dupont, T. Dutoit, R. Niewiadomski and C. Pelachaud, "Towards a virtual agent using similarity-based laughter production", in Proc. of Interdisciplinary Workshop on Laughter and other Interactional Vocalisations in Speech, Berlin, February 27-28, 2009.
50. S. Dupont, T. Dubuisson, J. Urbain, R. Sebbe, N. d'Alessandro & C. Frisson, "AudioCycle : Browsing Musical Loop Libraries", to be published in Proc. of IEEE Content Based Multimedia Indexing Conference (CBMI09), Chania, Greece, June 2009.
51. J. Urbain, T. Dubuisson, S. Dupont, C. Frisson, R. Sebbe & N. d'Alessandro, "Audiocycle: a Similarity-based Visualization of Musical Libraries", to be published in Proc. of International Conference on Multimedia and Expo (ICME09), Cancun, Mexico, June 2009.
52. D. Tardieu, R. Bose, J. Dubois, S. Dupont, S. Hidot, B. Mazzarino, A. Moinet, X. Siebert, G. Varni, A. VISENTIN, 2009, "Video Navigation Tool: Application to browsing a database of dancers' performances", Proceedings of the 5th International Summer Workshop on Multimodal Interfaces - eNTERFACE'09, pp. 35-40.
53. S. Dupont, C. Frisson, X. Siebert, D. Tardieu, 2010, "Browsing Sound and Music Libraries by Similarity", Proc. of the 128th AES Convention, London, May 2010.
54. C. Frisson, S. Dupont, X. Siebert, D. Tardieu, B. Macq, T. Dutoit, 2010, "DeviceCycle: rapid and reusable prototyping of gestural interfaces, applied to audio browsing by similarity", Conference on New Interfaces for Musical Expression, NIME'10, Sydney, Australia, July 2010.
55. D. Tardieu, X. Siebert, S. Dupont, B. Mazzarino, B. Blumenthal, 2010, "An Interactive Installation for Browsing a Dance Video Database", Proc. of IMIDA2010, Workshop on Interactive Multimedia Installations and Digital Art , at ICME2010, Singapore, July 2010.