Daniel Moraru

Born on 22.03.1977 at Bucharest, Romania (28 years old)
Nationality : Romanian

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JOB APPLICATION
Speech and Signal Processing PhD

Key Skills

Technical	Signal Processing, Speech Processing, Electronics	
	C/C++ , Visual Basic, Perl, HTML, Assembler INTEL, ARM, Network Sockets	
	Matlab, Windows, Linux	
Linguistics	English (highly fluent)	Romanian (native)
	French (highly fluent)	

Education

20/12/2004	Graduated PhD. in Signal Processing at INPG (Institut National Polytechnique de Grenoble) specialized in speech processing
2000 – 2001	DEA (Diplôme d'Etudes Approfondies) Signal Image Speech Telecommunications (SIPT), Institut National Polytechnique de Grenoble
1995 – 2000	Engineer graduate of University "Politehnica", Electronics and Telecommunications Faculty, Bucharest, Romania

Current and Previous Positions

Since 02.2005	Post Doctoral Researcher at Institut de Recherche en Informatique et Systèmes Aleatoires (IRISA/INRIA), Rennes, France
During 2004	Part of the team who developed ALIZE, a free library tool for speaker verification, identification and segmentation (http://www.lia.univ-avignon.fr/heberges/ALIZE/)
2001 – 2004	PhD Researcher "Speaker segmentation of audio and audio-video documents: application to multimedia information retrieval" CLIPS Laboratory (Communication Langagière et Interaction Personne-Système), Grenoble, France French Ministry of Research Scholarship Institut National Polytechnique Grenoble

Research Activities

See appendix for details:

- Speech Processing
- Statistical Modeling for Speaker Recognition
- Speech / Non-Speech Segmentation for Audio Documents

- Speaker Segmentation and Speaker Tracking for Broadcast News Data
- Highly Honorable Participations to The NIST (National Institute of Standards and Technologies) Evaluations on Speaker Segmentation / Diarization (SpRec 02, RT 03, RT 04) and on Video Segmentation (TREC 11)
    - SpRec02: Best Meeting Segmentation System
    - RT 04: Best Meeting Segmentation System

Recent Awards

2004 Best Meeting Segmentation System, National Institute of Standards and Technologies, Rich Transcription Meeting Evaluation 2004, Montreal, Canada, 2004

2002 Best Meeting Segmentation System, National Institute of Standards and Technologies, Speaker Recognition Evaluation 2002, Vienna, VA, USA, 2004

Teaching Experience

2003	Signal Processing	UFR- Informatique et Mathématiques Appliquées
2003	Software and Hardware Architectures	Ecole Polytechnique de l'Université Grenoble 1
2003	Software and Hardware Architectures	UFR-Informatique et Mathématiques Appliquées
2002	Scientific Informatics	Ecole Polytechnique de l'Université Grenoble 1
2002	Signal Processing	Ecole Nationale Supérieure d'Electronique et de Radioélectricité de Grenoble
2002	Eiffel Interview Jury	Ecole Polytechnique de l'Université Grenoble 1
2001	Signal Processing	Ecole Nationale Supérieure d'Electronique et de Radioélectricité de Grenoble
2001	Informatics	Université Pierre Mendès France

Stages

2002 "Blind Estimation of The Number of Speakers Speaking in An Audio Document", DDL Laboratory ("Dynamique du Langage"), Institut des Sciences de l'Homme Lyon

2000 "Speech Synthesis Network Server for The European Project NESPOLE!", Laboratory CLIPS , Grenoble

1999 "On the Use of Cohort Normalization for Speaker Verification", Graphco International, Bucarest, Roumanie

Selected Publications

See appendix for details:

- 1 international magazine submitted
- 9 international conferences with proceedings and review committee
- 3 French conferences with proceedings and review committee

Appendix 1
Research Activities

Key Words:

- Automatic Indexation of Multimedia Documents
- Speech Processing
- Statistical Models
- Speaker Recognition
- Information Retrieval on Multimedia Data

PhD. Research:

Title: Speaker segmentation of audio and audio-video documents: application to multimedia information retrieval

Start: October 2001

End: 20 December 2004

In automatic indexing of multimedia documents, there are various tasks related to speech and audio signal processing: automatic subtitling of a movie, classification of elements of a movie soundtrack, speech / music segmentation, speaker change detection. Speaker segmentation consists of recognizing who speaks and at which time on an audio document containing the speech from several people. Speaker segmentation is preformed without any *a priori* knowledge of the audio documents.

The applicative goal of my PhD. is to improve the information retrieval systems working on huge databases but, also to improve the performances of continuous speech recognition systems such as "RAPHAEL" the CLIPS laboratory system.

The segmentation system was tested on real broadcast news data recorded from public television and radio stations (CNN, NBC, VOA, France Inter, Radio France International) and also on telephone and meeting data.

The segmentation system was compared to other existent systems during the evaluations organized by NIST (National Institute of Standards and Technologies), namely the Speaker Recognition Evaluation 2002 and Rich Transcription Evaluation 2003 and 2004. The results obtained were highly honorable for all evaluations. The system was twice declared best meeting data system.

The system was also used during the information retrieval NIST evaluation TREC. The system was used on the audio part of video data for voice mining in order to find: monologue video shots, speech video shots and recently in finding story coherent shots (story segmentation).

My work results offered me the possibility to publish my work at well known international conferences and to collaborate with other French laboratories.

Appendix 2

Important Publications

International Magazines:

- "Approaches in broadcast news speaker segmentation", S.Meignier, D. Moraru, C. Fredouille, J.-F. Bonastre, L. Besacier, Elsevier Computer Speech and Language, submitted 1st November 2004

International Conferences:

- "Experiments on Speaker Tracking and Segmentation on Radio Broadcast News", D. Moraru, M. Ben, G. Gravier, EuroSpeech 2005, Lisbon, Portugal, September 2005
- "Speaker and Story Segmentation Using Audio-Video Information", D. Moraru, L. Besacier, G. Quenot, S. Ayache, Speech Technology and Human-Computer Dialogue 2005, Cluj-Napoca, Romania, May 2005
- "Using a priori information for speaker diarization", D.Moraru, L.Besacier, E.Castelli A Speaker Odyssey 2004, Toledo, Spain, May 2004
- "ELISA NIST RT 03 Broadcast News Speaker Diarization Experiments", D. Moraru, S. Meignier, C. Fredouille, L. Besacier, J-F Bonastre, A Speaker Odyssey 2004, Toledo, Spain, May 2004
- "The ELISA Consortium approaches in broadcast news speaker segmentation during the nist 2003 rich transcription evaluation", D. Moraru, S. Meignier, C. Fredouille, L. Besacier, J-F Bonastre, ICASSP 2004, Montreal, Canada, May 2004
- "Benefits of prior acoustic segmetation for automatic speaker segmentation", S. Meignier, D. Moraru, C. Fredouille, L. Besacier, J-F Bonastre, ICASSP 2004, Montreal, Canada, May 2004
- "The ELISA consortium approaches in speaker segmentation during the NIST 2002 speaker recognition evaluation", D. Moraru, S. Meignier, L. Besacier, J-F Bonastre, I. Magrin-Chagnolleau. ICASSP 2003, Honk-Kong, China, May 2003
- "CLIPS-IMAG at TREC-11 : Experiments in Video Retrieval", Georges M. Quénot, Daniel Moraru, Laurent Besacier, Philippe Mulhem, 11th Text Retrieval Conference, Gaithersburg, MD, USA, November 2002
- "Speech Translation for French in the NESPOLE! European Project", L. Besacier, H. Blanchon, Y. Fouquet, J.P. Guilbaud, S. Helme, S. Mazenot, D. Moraru, D. Vaufreydaz, Eurospeech 2001, Aalborg, Danemark, September 2001

National Conferences

- "Premiers pas du CLIPS sur les données d'évaluation ESTER", R. Lamy, D. Moraru, B. Bigi, L. Besacier, JEP 2004, Fès, Maroc, April 2004
- "Segmentation selon le locuteur: les activités du Consortium ELISA dans le cadre de Nist RT03", D. Moraru, S. Meignier, C. Fredouille, L. Besacier, J-F Bonastre, JEP 2004, Fès, Maroc, April 2004
- "Separation en locuteurs de conversations via IP", D. Moraru, L. Besacier, JEP 2002, Nancy, France, June 2002