

**Néstor Becerra-Yoma** was born in Santiago, Chile, on September 15<sup>th</sup>, 1964. He received the Ph.D. degree from the University of Edinburgh, UK, and the M.Sc. and B.Sc. degrees from UNICAMP (Campinas State University), Sao Paulo, Brazil, all of them in Electrical Engineering, in 1998, 1993 and 1986, respectively. In 1998 and 1999, he was a post-doc researcher at UNICAMP and a full-time professor at Mackenzie University in Sao Paulo, Brazil. From 2000 to 2002, he was an Assistant Professor at the Department of Electrical Engineering, Universidad de Chile, in Santiago, where he is currently lecturing on telecommunications and speech processing, and working on robust speech recognition/speaker verification, dialogue systems and voice over IP. At the Universidad de Chile he has set up the Speech Processing and Transmission Laboratory (LPTV<sup>1</sup>, *Laboratorio de Procesamiento y Transmisión de Voz*) to study speech technology applications on the Internet, education and telephone line.

Dr. Becerra-Yoma has been an Associate Professor since 2003 and is the author of 17 international journal articles and 30 conference papers. It is worth highlighting that almost all his publications are co-authored by his students. He has been the PI of two Fondef project (US\$ 450.000), three Fondecyt projects (US\$ 105.000) and two international cooperation projects. All these projects have been successfully executed, and have already finished or about to end. His results have got plenty of national press coverage in newspapers: deployment in schools of prototypes for English teaching using speech recognition and multimedia technology; and, speech recognition and vocal print technology for applications on telephony. He has supervised five M.Sc. theses and over 25 undergraduate dissertations in the last 7 years. He is also currently supervising 3 PhD students. Dr. Becerra-Yoma coordinated the commission that created the PhD program in Electrical Engineering at Universidad de Chile.

Dr. Becerra-Yoma was co-founder and elected chairman of the ISCA (International Speech Communication Association) Special Interest Group on Iberian Languages that already has over 100 members (professors, researchers and students) from Spain, Portugal, USA, Germany and Latin America. He has also been a chairman in several international conferences. Finally, he has been continuously invited to review papers in the most important international journal and conferences in speech and signal processing.

In the framework of his Fondef projects, Dr. Becerra-Yoma has organized several outreach events such as workshops, and ceremonies to officially launch the project and to deploy prototypes in schools. He has supervised the R&D activities that led to pre-competitive and competitive prototypes that are currently being evaluated by industry partners. In 2005, He got a 3<sup>rd</sup> place out of 20 proposals in a national contest for patenting.

His research interests include speech processing for telephony and education, real time Internet protocols, QoS, and usability evaluation of interfaces. Professor Becerra-Yoma is a member of the Institution of the Electrical and Electronic Engineers, and the International Speech Communication Association.

## **CONTACT INFORMATION**

Speech Processing and Transmission Laboratory  
Department of Electrical Engineering/Universidad de Chile  
Av. Tupper 2007, P.O.Box 412-3  
Santiago-CHILE  
Tel: +56-2-978 4205  
Fax: +56-2-695 3881  
E-mail. [nbecerra@ing.uchile.cl](mailto:nbecerra@ing.uchile.cl)  
<http://www.die.uchile.cl/LPTV>

---

<sup>1</sup> <http://www.die.uchile.cl/LPTV>

## **I. INTERNATIONAL JOURNAL PAPERS**

**(Only journals with permanent editorial board)**

**Néstor Becerra Yoma**, Claudio Garretón, Fernando Huenupan y Carlos Molina. “Unsupervised intra-speaker variability compensation based on Gestalt and model adaptation in speaker verification with telephone speech”, *Speech Communications (Elsevier)*, Vol. 50/11-12, 953-964, 2008.

Fernando Huenupan, **Néstor Becerra Yoma**, Claudio Garretón, Carlos Molina. Confidence based multiple classifier fusion in speaker verification. *Pattern Recognition Letters*, Vol 29/7 pp 957-966, 2008.

**Nestor Becerra Yoma**, Carlos Molina. “Feature-dependent compensation of coders in speech recognition”. *Signal Processing (Elsevier), IEEE Signal Processing Letters*, Vol. 86 (1), pp. 38-49, 2006.

Alejandro Bassi, **Néstor Becerra Yoma**, Patricio Loncomilla. “Estimating tonal prosodic discontinuities in Spanish using HMM”. *Speech Communications (Elsevier)*, Vol. 48, Pág. 1112-1125, 2006.

**Nestor Becerra Yoma**, Jorge Carrasco, Carlos Molina. “Bayes-based confidence measure in speech recognition”. *IEEE Signal Processing Letters*, Vol. 12 (11), pp. 745-748, 2005.

**Néstor Becerra Yoma**, Jorge Silva, Carlos Busso. “Modelling, estimating and compensating low-bit rate coding distortion in speech recognition”. *IEEE Transactions on Speech and Audio Processing*, Vol. 14(1), pp. 246-255, 2005.

Pablo Estevez, **Néstor Becerra Yoma**, Neven Borik, Juan Ramirez. “Genetic Programming-Based Voice Activity Detection”. *IEE Electronics Letters*, Vol.41 (20), pp.1141-1143, 2005.

**Nestor Becerra Yoma**, Carlos Busso, Ismael Soto. “Packet-loss modeling in IP networks with state duration constraints”. *IEE Proceedings on Communications*, Vol. 152 (1), pp.1-5, 2005.

**Néstor Becerra Yoma**, Juan Hood Llanos and Carlos Busso. “A real-time protocol for the Internet based on the Least Mean Square algorithm”. *IEEE Transactions on Multimedia*, Vol.6, N°1, Feb., pp. 174-184, 2004.

**Nestor Becerra Yoma**, Jorge Silva, Carlos Busso, Ivan Brito. “On compensating additive noise and CS-CELP distortion in speech recognition using the stochastic weighted Viterbi algorithm”. *IEE Electronics Letters*, pp. 409-411, Vol. 39, N° 4, Feb. 2003.

**Néstor Becerra Yoma** and Jorge Silva. “MAP speaker adaptation of state duration distributions for speech recognition”. *IEEE Transactions on Speech and Audio Processing* Vol. 10, N°7, pp.443-450, 2002.

**Néstor Becerra Yoma** and Miguel Villar. “Speaker Verification in noise using a stochastic version of the weighted Viterbi algorithm”. *IEEE Transactions on Speech and Audio Processing*, Vol. 10, No 3, March 2002.

**Néstor Becerra Yoma** and Tarciano F. Pegoraro. “Robust speaker verification using state duration modeling”. *Speech Communications (Elsevier)*, Vol. 38, pp.77-88, 2002.

**Néstor Becerra Yoma**, Fergus McInnes, Mervyn Jack, Sandra Stump, Lee Luan Ling. “On including temporal constraints in the Viterbi algorithm for speech recognition in noise”. IEEE Transactions on Speech and Audio Processing, Vol. 9, No.2, pp. 179-182, 2001.

**Néstor Becerra Yoma**, Fergus McInnes, Mervyn Jack. “Improving Performance of Spectral Subtraction in speech recognition using a model for additive noise”. IEEE Transactions on Speech and Audio Processing, Vol. 6, No. 6, 1998.

**Néstor Becerra Yoma**, Fergus McInnes, Mervyn Jack. “Robust speech pulse detection using adaptive noise modelling”. IEE Electronics Letters, Vol. 32, No. 15, July, 1996, pp. 1350-1352.

**Néstor Becerra Yoma**, Fergus McInnes, Mervyn Jack. “Lateral inhibition net and weighted matching algorithm for speech recognition in noise”. IEE Proceedings Vision, Image and Signal Processing, Vol. 143, No. 5, October 1996, pp. 324-330.

## **II. COLLABORATION WITH INTERNATIONAL JOURNALS AND SCIENTIFIC COMMITTEES**

### **IEEE**

#### **Transactions on Audio, Speech and Language Processing**

Reviewer of nine submitted papers

#### **Transactions on Signal Processing**

Reviewer of two submitted papers

#### **Signal Processing Letters**

Reviewer of three submitted papers

### **ICASSP**

2004, 2005, 2006, 2007, 2008

### **Elsevier**

#### **Speech Communications**

Guest Editor of the Special Issue on Iberian Languages in 2008

Reviewer of 11 submitted papers

### **ISCA**

#### **ICSLP and Interspeech (Eurospeech)**

2002, 2003, 2004, 2005, 2006, 2007, 2008

## **III. PROJECTS**

**PI**, “Research on adaptation and compensation techniques for speech and speaker recognition”. Conicyt/Fondecyt-Chile, US\$60.000, From March 2007 to March 2010.

**PI**, “ICT technologies for language learning and edutainment in Internet”. Conicyt/Fondef-Chile, US\$ 250.000. From March 2007 to February 2009.

**PI**, “Applied research on technologies for conversational human-machine interfaces”, Conicyt/Fondef-Chile, US\$250.000. From June 2003 to December 2006.

**PI**, “Speech recognition in conversational interfaces to information access in Internet”, Conicyt/Fondecyt-Chile, US\$60.000. From March 2003 to March 2007.

**PI**, “Acoustic pattern robust processing for telephony and Internet”, Conicyt/Fondecyt-Chile, US\$45.000. From March 2000 to March 2003.

**Co-PI**, “Optical networks for future Internet”, Conicyt/Fondef-Chile, US\$300.000. From October 2001 to September 2003.

**Researcher**, “Multimodal Interfaces in Wireless Communications”, Conicyt/Fondef-Chile, US\$ 250.000. From October 2001 to September 2003.

**PI**, International cooperation project with University of Colorado, USA, “NSF-CONICYT: “Advances in human language technology in USA and Chile by collaborative research on conversational human-machine-interfaces”, US\$6.000, From May 2002 to April 2004.

**PI**, International cooperation project with University of Edinburgh, UK, “Evaluation of conversational human-machine interfaces”, Conicyt/Fondecyt-Chile, US\$ 3000. March 2000.

#### **IV. SUPERVISION OF POSTGRADUATE STUDENTS**

Juan Pablo Arias, PhD in Electrical Engineering, Universidad de Chile, from March 2008.

Claudio Garretón Vender, PhD in Electrical Engineering, Universidad de Chile, from March 2007.

Fernando Huenupan Quiñan, PhD in Electrical Engineering, Universidad de Chile, from March 2006.

Carlos Antonio Molina Sánchez, PhD in Electrical Engineering, Universidad de Chile, from March 2006.

Claudio Garretón Vender, BSc and MSc in Electrical Engineering, Universidad de Chile, 2007.

Carlos Antonio Molina Sánchez, BSc and MSc in Electrical Engineering, Universidad de Chile, 2005.

Carlos Busso, BSc and MSc in Electrical Engineering, Universidad de Chile, 2003.

Tarciano Facco Pegoraro, MSc in Electrical Engineering, Unicamp, Brazil, 2000.

Francisco Pires Neto, MSc in Electrical Engineering, Makenzie University, Brazil, 2000.

## **V. AWARDS AND GRANTS**

Third place out of 20 in a national contest for patenting.

ESCA (European Speech Communication Association) Grant to attend Eurospeech 2007 in Rhodes, Greece, in 2007.

CNPq/Brazil grant for PhD studies in the UK.