Michael S. Scordilis, Ph.D.

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Expertise

- Electrical and Computer Engineering
- Analog and Digital Communications
- Computer Networks
- Engineering Acoustics
- Acoustic signal processing

- Audio Coding Algorithms/Standards
- Speech Recognition
- Speaker Recognition
- Digital Rights Management
- Data Watermarking & Security

Professional Summary

Dr. Michael Scordilis was an Associate Professor of Electrical and Computer Engineering at the University of Miami, Florida until his retirement in May 2021. He holds a Ph.D. in Electrical and Computer Engineering from Clemson University (1990). He has also held academic positions at Universities in Australia and Greece and visiting scientist positions at Bell Communications Research and Sun Microsystems Laboratories. He has supervised several Master and Ph.D. projects in acoustics, digital speech and audio processing research. He was associate editor of the Journal of the Franklin Institute, has served in the Audio Technical Group of the MPEG Standards Committee, the International Coordinating Committee for Speech Databases and Assessment and in the organization and technical committees of numerous conferences. He holds patents in the area of audio watermarking. His expertise, research and consulting experience include acoustics, digital signal processing, signal enhancement and noise suppression, speech and speaker, speech and audio coding intelligent man-machine interfaces, multimedia signal processing, telecommunications, computer networking and security, digital watermarking, and biometrics.

Education

Year	College/University	Degree
1990	Clemson University	Ph.D. in Electrical and Computer Engineering
1986	Clemson University	M.S. in Electrical Engineering
1983	Royal Melbourne Institute of Technology	Bachelor of Engineering in Communications Engineering

Employment History

From: 1997
To: 2021
University of Miami,
Coral Gables, FL
Position: *Associate Professor*
Teach and conduct research in electrical and computer networks; real time digital signal processing, acoustics, speech, audio and music processing, pattern recognition, machine learning, speech recognition and synthesis, biometrics, digital watermarking, immersive audio for telepresence applications; communication systems; engineering acoustics; underwater communications; analog and digital system design.

From: 1990
To: 1996
The University of Melbourne,
Melbourne, Australia
Position: *University Lecturer (Tenured)*

1994 **Sun Microsystems Laboratories,** Chelmsford, MA
Position: *Visiting Senior Scientist, Speech Recognition Group*
Adapting speech recognizers to new acoustic environmental conditions

	1994	**Bell Communications Research (Bellcore),** Morristown, NJ
	Position:	*Visiting Senior Scientist, Speech Analysis and Synthesis Group*
		Improving the ORATOR speech synthesis system
From:	1984	**Department of Electrical and Computer Engineering**
To:	1990	Clemson, SC
	Position:	*Graduate Research Fellow and Teaching Assistant*
		Neural networks and speech processing research
From:	1982	**LM Ericsson**
To:	1984	Melbourne, Australia
	Position:	*Technical Officer*
		Production and testing of the AXE and ASB900 digital telephone exchanges and centers and computer communication modems
From:	1980	**CompuServe**
To:	1981	Newcastle, Australia
	Position:	*Computer hardware developer (summer intern)*

Patents

Patent Number	Date Issued	Title
US 7,079,633 B2	07/18/2006	Coding a masked data channel in a radio signal
US 6,996,521	02/07/2006	Auxiliary channel masking in an audio signal

Publications

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Nocito, C.D., Scordilis, M.S., "Monitoring jitter and packet loss in VoIP networks using speech quality features," Proceedings of the 8th Annual IEEE Consumer Communications and Networking Conference - Work in Progress (Short Papers), January 9-12, 2011, Las Vegas, NV, (CCNC2011), pp. 685-686

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Scordilis, M.S., Iliev, A.I., Papa, J.P., Falcão, A.X., "Spoken emotion recognition through optimum-path forest classification using glottal features," Journal of Computer Speech and Language - Special Issue on Emergent Artificial Intelligence Approaches for Pattern Recognition in Speech and Language Processing, 24 (2010) 445–460

He, X., Scordilis, M.S., Psychoacoustic Music Analysis Based on the Discrete Wavelet Packet Transform," Research Letters in Signal Processing, Volume 2008, Article ID 346767, 5 pages

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Zhang, Y., Scordilis, M.S., "Online Acoustic and Pronunciation Adaptation Techniques in Automatic Speech Recognition," in Sorokin, V.N. (ed.), *Speech Communication at the Leading Edge*, ISBN 1-60021-786-0, Nova Science Publishers, 2008

Iliev, I.A., Scordilis, M.S., "Emotion Recognition in Speech using Inter-Sentence Glottal Statistics," Proceedings of the 15th International Conference on systems, Signals and Image Processing, IWSSIP 2008, Bratislava, Slovakia, June 25-28, 2008, pp. 465-468

Iliev, I.A., Zhang, Y., Scordilis, M.S., "Spoken Emotion Classification Using ToBI Features and GMM," Proceedings of the 14th International Workshop on Signals and Image Processing 2007 and the 6th EURASIP Conference focused on Speech and Image Processing, Multimedia Communications and Services, IWSSIP 2007, Maribor, Slovenia, June 27-30, 2007, pp. 495-498

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Jin W., Scordilis, M.S., "Speech Enhancement by Residual Domain Constrained Optimization," Journal of Speech Communication, Vol. 8 (10), October 2006, pp.1349-1364

He, X., Scordilis, M.S., "A Psychoacoustic Model Based on the Discrete Wavelet Packet Transform," Journal of the Franklin Institute, Volume 343, Issue 7, November 2006, pp. 738-755

Abdou, S., Scordilis, M.S., "Beam Search Pruning in Speech Recognition Using a Posterior Probability-Based Confidence Measure," Journal of Speech Communication, Vol. 423-4, 2004, pp. 409-428, (University of Miami, College of Engineering 2005 Research Paper Award Finalist for Eliahu I. Jury Award for Excellence in Research, November 2005)

Jin, W., Scordilis, M.S., "Single Channel Speech Enhancement by Frequency Domain Constrained Optimization and Temporal Masking," Proceedings of the International Conference on Spoken Language Processing, INTERSPEECH 2006, Pittsburgh, PA, USA, September 17-21, 2006, pp. 1411-1414

Jin, W., Scordilis, M.S., "Speech Enhancement by Residual Domain-Constrained Optimization," Proceedings of the 5th European Signal Processing Conference (EURASIP2005) on Speech and Image Processing, Multimedia Communications and Services, Smolenice, Slovakia, June 29-July 2, 2005, pp. 234-239

Jin, W., Scordilis, M.S., "Speech Enhancement by Kalman Filtering with Residual Noise Clipping," Proceedings of the IEEE Southeast Conference, Fort Lauderdale, FL, April 8-10, 2005, pp. 225-228

He, X., Scordilis, M.S., "Improved Spread Spectrum Digital Audio Watermarking Based on a Modified Perceptual Entropy Psychoacoustic Model," Proceedings of the IEEE Southeast Conference, Fort Lauderdale, FL, April 8-10, 2005, pp. 283-286

He X., Li, G, Scordilis, M.S., "A Novel VQ-based Speech Recognition Approach for Mobile Terminals," Proceedings of the IEEE Southeast Conference, Fort Lauderdale, FL, April 8-10, 2005, pp. 433-436

Zhang, Y., Scordilis, M.S., "Robust Voiced/Unvoiced/Mixed/Silence Classifier with Maximum A Posteriori Channel/Background Adaptation," Proceedings of the IEEE Southeast Conference, Fort Lauderdale, FL, April 8-10, 2005, pp. 229-232

Iliev, I.A., Scordilis, M.S., "Multilevel High Capacity Data Hiding Technique for Stereo Audio," Proceedings of the 2004 Asilomar Conference, Pacific Grove, California, November 7-10, 2004, pp. 1793-1797

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He, X., Iliev, I.A., Scordilis, M.S., "A High Capacity Watermarking Technique for Stereo Audio," Proceedings of the IEEE International Conference on Acoustics Speech and Signal Processing, ICASSP2004, Montreal, Canada, May 2004, vol. 5, pp. 393-396

Zhang, Y., Fahmy, A.I, Scordilis M.S., "Speaker Verification Using Speaker-Specific Prompts," Proceedings of the 17th International Artificial Intelligence Research Symposium, FLAIRS 2004, Miami, Florida, May 17-19, 2004, pp. 826-832

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Veprek, P., Scordilis, M.S., "Analysis, Enhancement and Evaluation of Five Pitch Determination Techniques," Elsevier Science Journal of Speech Communication, Vol. 37, July 2002, pp. 249-270 (Best Research Paper Award; University of Miami College of Engineering 2003 Eliahu I. Jury Award for Excellence in Research. Most downloaded paper from the Elsevier website in 2002)

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Abdou, S., Scordilis, M.S., "Confidence Measures as a Speech Guide in Speech Recognition," Proceedings of the 2002 IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP2002, Orlando, Florida, Utah, May 13-17, 2002, vol. IV, pp. 4162

Abdou, S., Scordilis, M.S., "Integrating Multiple Knowledge Sources for Improved Speech Understanding," Proceedings of the 7th European Conference on Speech Communication and Technology, EUROSPEECH 2001, Aalborg, Denmark, August 3-7, 2001

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