

Nikolaos (Nikos) Flemotomos

Ming Hsieh Department of Electrical Engineering
University of Southern California
3710 McClintock Ave., Room RTH 317
Los Angeles, CA 90089

✉ flemotom@usc.edu
☎ +1 213 421 7498
🌐 nikosfl.github.io
📄 /in/nikosfl

RESEARCH INTERESTS Speaker Diarization and Role Recognition, Speech Recognition, Machine Learning

EDUCATION **Ph.D., Electrical Engineering** started Aug 2016
University of Southern California, Los Angeles, CA, U.S.A.

M.Sc., Electrical Engineering Dec 2018
University of Southern California, Los Angeles, CA, U.S.A.
GPA: 4.00/4.00

Diploma (5-years degree), Electrical and Computer Engineering Apr 2016
National Technical University of Athens, Athens, Greece
Thesis: *Robust Acoustic Features for Distant Speech Recognition*
GPA: 9.34/10.00

WORKING EXPERIENCE **University of Southern California**, Los Angeles, CA, U.S.A.
Signal Processing and Interpretation Laboratory (SAIL)

Graduate Research Assistant May 2017 to present

- Exploring neural embeddings and alternative clustering approaches for speaker diarization.
- Combining Speaker Role Recognition (SRR) with other speech processing modules (e.g. diarization, speech recognition) in order both to improve the performance of SRR itself and to provide useful information to the modules it is combined with.
- Leading a subgroup that develops a real-world system which, after processing recordings of psychotherapy sessions, gives feedback to the therapist. The system is used for computer-aided therapist training.

Microsoft Research, Bellevue, WA, U.S.A.

Speech and Dialog Research Group

Research Intern

May 2019 to Aug 2019

- Worked on speaker identification and diarization in meeting scenarios.

Czech Technical University in Prague, Prague, Czech Republic

Biomedical Data and Signal Processing Group (BioDat)

Research Intern

Mar 2016 to Jun 2016

- Developed a novel algorithm for automatic sleep staging from polysomnographic signals, motivated by ideas used in speech recognition.

National Technical University of Athens, Athens, Greece

Computer Vision, Speech Communication and Signal Processing Group (CVSP)

Undergraduate Research Assistant

Feb 2015 to Mar 2016

- Explored the Teager-Kaiser energy operator for energy estimation in speech signals.
- Developed and tested a system for single-microphone distant speech recognition, comparing various acoustic feature sets, with an emphasis on those based on the AM-FM speech model.

SOFTWARE SKILLS **Programming Languages:**

Python, UNIX shell scripting, MATLAB, C
C++, Java, ML, R, Prolog, SQL

*extensive experience
familiarity*

Tools & Libraries:

Kaldi, OpenFST, Tensorflow, Keras, SRILM, L^AT_EX

GRADUATE COURSEWORK	Computational Social Sciences, Mathematics of High-Dimensional Data, Machine Learning Theory, Deep Learning, Machine Learning from Signals, Pattern Recognition, Statistics, Probability, Random Processes	
TEACHING EXPERIENCE	University of Southern California , Los Angeles, CA, U.S.A. <i>Teaching Assistant</i> Speech Recognition and Processing for Multimedia Society of Astronomy and Space , Volos, Greece <i>Teaching Assistant</i> Preparation for the International Olympiad on Astronomy and Astrophysics	 Spring 2019 Summer 2011 & 2012
AWARDS AND DISTINCTIONS	Annenberg Ph.D. Fellowship University of Southern California Travel Grant International Speech Communication Association (ISCA) Honorable Mention 4th International Olympiad on Astronomy and Astrophysics, Beijing, China	 Aug 2016 to present Sep 2018 Sep 2010
JOURNAL PUBLICATIONS	1. S.B. Goldberg, N. Flemotomos , V.R. Martinez, M. Tanana, P. Kuo, B.T. Pace, J.L. Villatte, P. Georgiou, J. Van Epps, Z.E. Imel, S. Narayanan, and D.C. Atkins (in press). “Machine Learning and Natural Language Processing in Psychotherapy Research: Alliance as Example Use Case”, <i>Journal of Counseling Psychology</i> , 2019.	
CONFERENCE PROCEEDINGS	1. N. Flemotomos , P. Georgiou, and S. Narayanan. “Language Aided Speaker Diarization Using Speaker Role Information”, <i>submitted to ICASSP</i> , 2020. 2. N. Flemotomos , and D. Dimitriadis. “A Memory Augmented Architecture for Continuous Speaker Identification in Meetings”, <i>submitted to ICASSP</i> , 2020. 3. T.J. Park, M. Kumar, N. Flemotomos , M. Pal, R. Peri, R. Lahiri, P. Georgiou, and S. Narayanan. “The Second DIHARD Challenge: System Description for USC-SAIL Team”, <i>Proc. Interspeech</i> , 2019 4. V.R. Martinez, N. Flemotomos , V. Ardulov, K. Somandepalli, S.B. Goldberg, Z.E. Imel, D.C. Atkins, and S. Narayanan. “Identifying Therapist and Client Personae for Therapeutic Alliance Estimation”, <i>Proc. Interspeech</i> , 2019. 5. N. Flemotomos , P. Georgiou, D.C. Atkins, and S. Narayanan, “Role Specific Lattice Rescoring for Speaker Role Recognition from Speech Recognition Outputs”, <i>Proc. ICASSP</i> , 2019. 6. N. Flemotomos , Z. Chen, D.C. Atkins, and S. Narayanan, “Role Annotated Speech Recognition for Conversational Interactions”, <i>Proc. SLT</i> , 2018. 7. N. Flemotomos , P. Papadopoulos, J. Gibson, and S. Narayanan, “Combined Speaker Clustering and Role Recognition in Conversational Speech”, <i>Proc. Interspeech</i> , 2018. 8. N. Flemotomos , V.R. Martinez, J. Gibson, D.C. Atkins, T.A. Creed, and S. Narayanan, “Language Features for Automated Evaluation of Cognitive Behavior Psychotherapy Sessions”, <i>Proc. Interspeech</i> , 2018. 9. K. Singla, Z. Chen, N. Flemotomos , J. Gibson, D. Can, D.C. Atkins, and S. Narayanan, “Using Prosodic and Lexical Information for Learning Utterance-level Behaviors in Psychotherapy”, <i>Proc. Interspeech</i> , 2018.	

SERVICE AND VOLUNTARY WORK	Hellenic Student Association of USC	
	Student volunteer and board member	Jan 2018 to May 2019
	IEEE Engineering in Medicine & Biology Society NTUA Student Chapter	
	President	Sep 2014 to Jun 2015
	Student volunteer	Sep 2013 to Jun 2014
	7th International Olympiad on Astronomy and Astrophysics	
	Student volunteer	Aug 2014
	Greek Astronomy Magazine ‘Ouranos’ (‘Sky’)	
	Member of the writing team	Sep 2012 to Mar 2015
	AEGEE-Athina	
	politically independent student organisation aiming at a democratic, diverse Europe	
	Volunteer	Sep 2012 to Sep 2013
LANGUAGES	Greek , Native Speaker	
	English , Proficient Level	<i>Certificate of Proficiency in English</i>
	French , Intermediate Level	<i>Diplôme Approfondi de Langue Française (DALF C1-C2)</i>
	Japanese , Beginner Level	<i>Level N5 of the Japanese-Language Proficiency Test</i>
REFERENCES	Available upon request.	