

Daniel Michelsanti

PHD FELLOW · SPEECH PROCESSING AND COMPUTER VISION RESEARCHER

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Deep learning enthusiast. Dealing with speech processing and computer vision while enjoying hygge in Denmark. Currently working on a project regarding audio-visual speech enhancement.

Experience

Aalborg University (AAU)

RESEARCH ASSISTANT

- Project: Analysis of acoustic signals for industry 4.0 applications.

Aalborg, DENMARK

Sep 2020 - Present

Universitat Pompeu Fabra (UPF)

VISITING RESEARCHER

- Collaboration with the image processing and the music technology groups.
- Research on deep learning applied to speech reconstruction from silent videos.

Barcelona, SPAIN

Sep 2019 - Dec 2019

Aalborg University (AAU)

TEACHING ASSISTANT

- Course: Machine learning.

Aalborg, DENMARK

Sep 2018 - Dec 2018

Aalborg University (AAU)

STUDENT TEACHER

- Organisation of the workshops and the activities for the students interested in learning the Italian language during the SprogCamp 2016 and the SprogCamp 2017 at Hjørring Gymnasium.

Hjørring, DENMARK

Jan 2016 & Jan 2017

Bang and Olufsen A/S (B&O)

MACHINE LEARNING INTERN

- Design and implementation of a multimodal identification system based on machine learning techniques.

Struer, DENMARK

Sep 2016 - Dec 2016

Aspasiel

ALGORITHM DEVELOPMENT INTERN

- Implementation of an algorithm for production scheduling to be used at Acciai Speciali Terni, the market leader of flat rolled stainless steel products in Italy.

Terni, ITALY

Oct 2012 - Dec 2012

Education

Aalborg University (AAU)

PHD FELLOW

- Project: Deep-learning-based audio-visual speech enhancement.
- Supervisors: Prof. Zheng-Hua Tan and Prof. Jesper Jensen.

Aalborg, DENMARK

Sep 2017 - Aug 2020

Aalborg University (AAU)

MSC IN VISION, GRAPHICS AND INTERACTIVE SYSTEMS - GPA: 11.5/12

- Thesis Title: Generative adversarial networks for speech processing.
- Supervisor: Prof. Zheng-Hua Tan.

Aalborg, DENMARK

Sep 2015 - Jun 2017

Università degli Studi di Perugia

BSC IN COMPUTER AND ELECTRONIC ENGINEERING - FINAL GRADE: 110/110 CUM LAUDE

- Thesis Title: Sorting algorithm implementation to optimise the input sequence of the annealing and pickling line at Acciai Speciali Terni.
- Supervisor: Prof. Emilio Di Giacomo.

Perugia, ITALY

Sep 2009 - Feb 2014

Liceo Classico Jacopone da Todì

LICEO CLASSICO (HIGH SCHOOL EQUIVALENT) - FINAL GRADE: 100/100

- Humanistic studies.

Todi, ITALY

Sep 2004 - Jul 2009

Publications

Michelsanti, D., Tan, Z.-H., Zhang, S.-X., Xu, Y., Yu, M., Yu, D. and Jensen, J. "An overview of deep-learning-based audio-visual speech enhancement and separation". arXiv preprint arXiv:2008.09586. 2020.

Michelsanti, D., Slizovskaia, O., Haro, G., Gómez, E., Tan, Z.-H. and Jensen, J. “Vocoder-based speech synthesis from silent videos”. Proceedings of Interspeech (to appear). 2020.

Michelsanti, D., Tan, Z.-H., Sigurdsson, S. and Jensen, J. “Deep-learning-based audio-visual speech enhancement in presence of Lombard effect”. Speech Communication, 115, pp.38–50. 2019.

Michelsanti, D., Tan, Z.-H., Sigurdsson, S. and Jensen, J. “Effects of Lombard reflex on the performance of deep-learning-based audio-visual speech enhancement systems”. Proceedings of ICASSP, pp.6615–6619. 2019.

Michelsanti, D., Tan, Z.-H., Sigurdsson, S. and Jensen, J. “On training targets and objective functions for deep-learning-based audio-visual speech enhancement”. Proceedings of ICASSP, pp.8077–8081. 2019.

Michelsanti, D., Tan, Z.-H., Sigurdsson, S. and Jensen, J. “Conditional generative adversarial networks for speech enhancement and noise-robust speaker verification”. Proceedings of INTERSPEECH, pp.2008–2012. 2017.

Michelsanti, D., Ene, A.-D., Guichi, Y., Stef, R., Nasrollahi, K. and Moeslund, T. B. “Fast fingerprint classification with deep neural networks”. Proceedings of VISIGRAPP, pp.202–209. 2017.

Arbués-Sangüesa, A., Ene, A.-D., Jørgensen, N. K., Larsen, C. A., **Michelsanti, D.** and Kraus, M. “Pyramid algorithm framework for real-time image effects in game engines”. Interactivity, Game Creation, Design, Learning, and Innovation, pp.289–296. Springer, Cham. 2016.

Conferences, Workshops and Summer Schools

2020	MLSP , Virtual participation.	<i>Espoo, FINLAND</i>
2020	ICASSP , Virtual participation.	<i>Barcelona, SPAIN</i>
2019	DLBCN , Poster presentation.	<i>Barcelona, SPAIN</i>
2019	ICASSP , Poster and oral presentation.	<i>Brighton, U.K.</i>
2019	AMLD , Poster presentation.	<i>Lausanne, SWITZERLAND</i>
2018	MLSP , Participation.	<i>Aalborg, DENMARK</i>
2018	Summer school on advanced topics in machine learning , Participation.	<i>Copenhagen, DENMARK</i>
2018	ICVSS , 150 selected out of 557. Poster presentation. Winner of the reading group competition.	<i>Punta Sempieri, ITALY</i>
2017	Winter school on signal processing for hearing assistive devices , Participation.	<i>Aalborg, DENMARK</i>
2017	INTER_SPEECH , Poster presentation.	<i>Stockholm, SWEDEN</i>
2017	VISIGRAPP , Oral presentation.	<i>Porto, PORTUGAL</i>
2016	SPLINE , Participation.	<i>Aalborg, DENMARK</i>
2016	The Innovation Camp powered by Bang and Olufsen , Participation.	<i>Struer, DENMARK</i>
2016	ArtsIT , Oral presentation.	<i>Esbjerg, DENMARK</i>

Talks and Lectures

2020	Audio-visual speech enhancement based on deep fusion , Aalborg University.	<i>Aalborg, DENMARK</i>
2019	Audio-visual speech enhancement for hearing assistive devices , Universitat Pompeu Fabra.	<i>Barcelona, SPAIN</i>
2018	Audio-visual speech enhancement for hearing assistive devices , Oticon A/S.	<i>Copenhagen, DENMARK</i>
2018	Audio-visual speech enhancement based on deep fusion , Aalborg University.	<i>Aalborg, DENMARK</i>

Academic Service

Reviewer for: Computer Modeling in Engineering & Sciences, Tech Science Press; Computer Speech & Language, Elsevier; IEEE Access; IEEE/ACM Transactions on Audio, Speech, and Language Processing; IEEE Signal Processing Letters; Neural Networks, Elsevier.

Additional Information

Languages	Italian (Native Speaker), English (Full Professional Proficiency), Danish (Elementary Proficiency).
Programming	Python (PyTorch, Tensorflow), MATLAB.
Writing and Presentation	L ^A T _E X, Word, PowerPoint.
Professional Membership	IEEE - Denmark Section (Student Member). ISCA Speech (Member).
Photo and Video Editing	Affinity Photo, OmniGraffle, iMovie.
Driving License	Danish kørekort (Categories: AM/B/LK/TM).
Hobbies	Photography, cooking, board games.