Dr. Ing. Zied MNASRI
Research fellow, Faculty of engineering and architecture Kore University, Enna, Italy
Research fellow, DIBRIS, University of Genoa, Italy
Assistant Professor, Electrical engineering Dept., ENIT, University Tunis El Manar, Tunisia

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Academic Credentials

Ph.D in electrical Engineering, ENIT, University Tunis El Manar — Sep. 2007-Feb. 2011
Thesis: Prosody modeling using statistical learning for Arabic speech synthesis, directed by Prof. Em. Noureddine Ellouze, University of Tunis El Manar, and refereed by Prof. Em. Jean Sylvain Liénard, LIMSI-CNRS, France.

Ms. in electrical engineering (Option: Automation and DSP), ENIT, University Tunis El Manar — Sep. 2003-Jul. 2004
Thesis: Arabic speech synthesis using sinusoidal modeling (SINOLA)

State Diploma in electrical engineering, ENIT, University Tunis El Manar — Sep. 1997-Jul. 2003

Bs. Diploma in Mathematics, Physics and Informatics, Faculty of science in Tunis, University Tunis El Manar — Sep. 1997-Jul. 2000

Programming skills

C/C++/Visual C, Matlab, Python (including Keras and Tensorflow)

Languages

Arabic (Mother tongue), French (Excellent), English (Excellent), Italian (Good)

Professional experience

Research fellow at Kore University, Enna, Italy	Since Jul. 2021
Research fellow at DIBRIS, University of Genoa, Italy	Sep. 2018-Jun.2021
Assistant Professor at ENIT, University Tunis El Manar	Sep.2011-Aug.2018
Ph. D. Researcher at ENIT, University Tunis El Manar	Sep. 2007-Aug.2011
Electrical engineer at SKOT Transformers (Tunisia & UK)	May 2004-Aug. 2007
Trainee engineer at Schindler Elevators (Switzerland)	Jul. 2003-Dec. 2003

Research areas

Audio and speech signal processing ((Recognition, synthesis, audio event detection)
Natural language processing (Text mining and prosody modeling)
Machine learning (HMM, DNN, SVM)

Research projects

Phonetic analysis of dysarthric speech by speakers of different varieties of Italian, a joint Prin 2000 Project between Kore University of Enna, University of Bari and University of Salento at Lecce, Italy.	Since Jul.2021
Xpert: Short-term urban traffic forecasting, supported by the University of Genoa, Italy and the region of Liguria, Italy.	Sep. 2019-Jun.2021
Learning of unlimited data streams: unsupervised methods and applications, supported by University of Genoa, Italy	Sep. 2018- Aug 2019
Design and development of an integrated text-to-speech environment for Arabic, in cooperation with LORIA lab, University of Lorraine, France (CMCU Grant N 15G1405)	Jan 2015- Dec 2018

Didactic activities

At Faculty of engineering and architecture, Kore University of Enna	**Academic year(s)**
Fundamentals of computer science (9CFU/54-hour course for Bs. in computer science)	2021-2022
At DIBRIS, University of Genova	**Academic year(s)**
Speech processing and recognition (6CFU/40-hour course for Ms. in computer science)	2020-2021 2019-2020
Fundamentals of computer science (2 x 20-hour lab for Bs. in mechanical engineering)	2018-2019
At National school of engineering, University of Tunis El Manar	
Digital signal processing (22-hour course for Ms. in electrical engineering)	2017-2018
Analog electronics (45-hour course for Ms. In electrical engineering)	2016-2017 2017-2018
Labs in electronics, digital signal processing and microprocessor/microcontroller programming	From 2011-2012 to 2017-2018

Referees

Prof. Francesco Masulli, Full Professor, Dipartimento di Informatica, Bioingegneria, Robotica e Ingegneria dei Sistemi (DIBRIS), Università degli studi di Genova, francesco.masulli@unige.it

Prof. Stefano Rovetta, Associate professor, Dipartimento di Informatica, Bioingegneria, Robotica e Ingegneria dei Sistemi (DIBRIS), Università degli studi di Genova, stefano.rovetta@unige.it

Prof. Mohamed Wissem Naouar, Associate professor, Electrical engineering dept., National school of engineering in Tunis (ENIT), University Tunis El Manar, wissem.naouar@enit.utm.tn

Memebership of scientific commitees (as reviewer)

EUSFLAT 2021, Bratislava, Slovakia, Sept., 19-24, 2021
https://ifsa-eusflat2021.eu/materials/eusflat2021abstracts.pdf

EAIS-IEEE 2020, Bari, Italy, May, 27-29, 2020

https://sites.google.com/view/eais2020/home

EUSFLAT 2019, Prague, Czeck republic, Sept., 9-13, 2019
http://eusflat2019.cz/committees.html

SETIT-IEEE 2018, Hammamet, Tunisia, Dec., 18-20, 2018
http://www.setit.rnu.tn/scientific-committee.html

Membership of program commitees (as co-organizer)

Special session in"Advances of segmentation of data streams", in Evolving and adaptive Intelligent Systems, EAIS 2020, Bari, Italy, May, 27-29, 2020 (https://sites.google.com/view/eais2020/conference/special-sessions/advances-in-segmentation-of-data-streams)

Special session in "Evolving and adaptive fuzzy models for data streams", in EUSFLAT 2019, Prague, Czech republic, Sept. 09-13, 2019 (http://eusflat2019.cz/special_sessions.html)

As member of the organizing committee

"12th International workshop of fuzzy logic and applications", WILF 2018, Genoa, Italy, Sept. 6-7, 2018 (https://sites.google.com/site/wilf2018fuzzy/commitees-1)

Publications, grants and awards

Publications

8 journal papers (6 SCOPUS-indexed)
8 chapters in volume/edited book series
16 papers in international conferences (10 presented personally)
4 abstracts in Italian conferences (All presented personally)
3 monograms

Grants

4-year research fellow grants (assegno di ricerca) in Italy
PI (from Tunisian part) of a 3-year joint project between University of Tunis El Manar and LORIA-INRIA and Univeristy of Lorraine, France (CMCU Project #14G05)

Awards

Co-author of best student paper award: Amal Houidhek, Vincent Colotte, Zied Mnasri, Denis Jouvet, Imene Zangar, "Statistical modelling of speech units in HMM-based speech synthesis for Arabic", in *8th Language technology conference (LTC 2017)*, Nov 17-19, Poznan, Poland, https://hal.inria.fr/hal-01649034

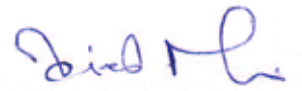
Seminars/Tutorials/Invited lectures

1. "Audio event detection for smart cities: Applications, methods and open challenges", Tutorial in 6th Forum on Research and Technology for Society and Industry Innovation for a smart world, Naples, Sept. 6-9, 2021.
2. "Application of machine learning in audio and speech processing", in *Ph.D summer school on machine learning and computation intelligence (MLCI)*, DIBRIS, University of Genova, June. 1, 2020.

3. "Anomalous audio event detection: State of the art and trends", *Lecture organized by IEEE computational intelligence chapter, Italy*, DIBRIS, University of Genova, Dec. 10, 2020.
4. "Application of machine learning in audio and speech processing", in *Ph.D summer school on machine learning and computation intelligence (MLCI)*, DIBRIS, University of Genova, June. 3, 2020.
5. "Overview on speech processing: Fundamentals, techniques and applications", *Lecture organized by IEEE computational intelligence chapter, Italy*, DIBRIS, University of Genova, Feb. 19, 2019.

Enna, il 21/11/2021

Zied Mnasri



LIST OF PUBLICATIONS

Dr. Ing. Zied MNASRI

Research fellow,
Faculty of engineering and architecture, University Kore at Enna, Italy
DIBRIS, University of Genoa, Italy
National school of engineering, University Tunis El-Manar, Tunisia

Peer-Reviewed journals

1. Stefano Rovetta, Zied Mnasri, Francesco Masulli, Alberto Cabri, Emotion recognition from speech: an unsupervised learning approach, in International journal of computation intelligence systems (2020) DOI:10.2991/ijcis.d.201019.002

2. Imene Zangar, Zied Mnasri, Vincent Colotte, Denis Jouvet, Duration modeling and evaluation for arabic statistical parametric speech synthesis, in Multimedia tools and applications journal Springer (2020), DOI: 10.1007/s11042-020-09901-7

3. Hadj Ali, I., Mnasri, Z. & Lachiri, Z. DNN-based grapheme-to-phoneme conversion for Arabic text-to-speech synthesis. International journal of speech technology 23**,** 569–584 Springer, Cham (2020). https://doi.org/10.1007/s10772-020-09750-7

4. Amal Houidhek, Vincent Colotte, Zied Mnasri, Denis Jouvet, *Evaluation of speech unit modelling for HMM-based speech synthesis system for Arabic* , International journal of speech technology, Springer, Cham (2018).

5. Raja Abdelmalek, Zied Mnasri, Faouzi Benzarti, *Determining the optimal conditions for signal reconstruction based on STFT magnitude*, International journal of speech technology, Springer, Cham (2018).

6. Zied Mnasri, Fatouma Boukadida, Noureddine Ellouze, *F_0 contour modeling using Neural Networks and Fujisaki parameters*, in Signal Processing : an International Journal, Vol4, Issue 6, pp 351-368, (2011).

7. Zied Mnasri, Fatouma Boukadida, Noureddine Ellouze, *Design and Development of a Prosody Generator for Arabic TTS Systems*, in International Journal of Computer Applications, Vol 12, No 1, pp 24-31, (2010).

8. Zied Mnasri, Fatouma Boukadida, Noureddine Ellouze, *Segmental duration modeling using non parametric statistical learning*, in International Review of Computer and Software, Vol 4, No 5, pp 533-542, (2009), **ISSN:** 1828-6003

Contributi in volume

1. Mnasri Z., Rovetta S., Masulli F., Cabri A. (2022) Dealing with Uncertainty in Anomalous Audio Event Detection Using Fuzzy Modeling. In: Jansen T., Jensen R., Mac Parthaláin N., Lin CM. (eds) Advances in Computational Intelligence Systems. UKCI 2021. Advances in Intelligent Systems and Computing, vol 1409. Springer, Cham. https://doi.org/10.1007/978-3-030-87094-2_44

2. Abdelmalek, R., & Mnasri, Z. (2020). "Prosody-based speech synthesis by unit selection for Arabic". In *Communication, Signal Processing & Information Technology*. Berlin, Boston: De Gruyter. doi: https://doi.org/10.1515/9783110594003-011

3. Rovetta, S., Mnasri, Z., & Masulli, F., "Emotional Content Comparison in Speech Signal Using Feature Embedding". In *Progresses in Artificial Intelligence and Neural Systems* (pp. 45-55). Springer, Singapore, DOI 10.1007/978-981-15-5093-5

4. Mnasri Z., Rovetta S., Masulli F., "Feature Analysis for Emotional Content Comparison in Speech". In: *Ju Z., Yang L., Yang C., Gegov A., Zhou D. (eds) Advances in Computational Intelligence Systems. UKCI 2019. Advances in Intelligent Systems and Computing*, vol 1043. Springer, Cham. https://doi.org/10.1007/978-3-030-29933-0_41

5. Zangar I., Mnasri Z., Colotte V., Jouvet D., "F0 Modeling Using DNN for Arabic Parametric Speech Synthesis". In: *Oneto L., Navarin N., Sperduti A., Anguita D. (eds) Recent Advances in Big Data and Deep Learning. INNS-BDDL 2019. Proceedings of the International Neural Networks Society*, vol 1. Springer, Cham. https://doi.org/10.1007/978-3-030-16841-4_20

6. Abdelmalek R., Mnasri Z., Benzarti F., "Signal Reconstruction Based on the Relationship Between STFT Magnitude and Phase Spectra". In: *Bouhlel M., Rovetta S. (eds) Proceedings of the 8th International Conference on Sciences of Electronics, Technologies of Information and Telecommunications (SETIT'18),* Vol.2. SETIT 2018. Smart Innovation, Systems and Technologies, vol 147. Springer, Cham. https://doi.org/10.1007/978-3-030-21009-0_3

7. Houidhek A., Colotte V., Mnasri Z., Jouvet D., "DNN-Based Speech Synthesis for Arabic: Modelling and Evaluation". In: *Dutoit T., Martín-Vide C., Pironkov G. (eds) Statistical Language and Speech Processing. SLSP 2018. Lecture Notes in Computer Science*, vol 11171. Springer, Cham. https://doi.org/10.1007/978-3-030-00810-9_2

8. Hadj Ali I., Mnasri Z., "Statistical Analysis of the Prosodic Parameters of a Spontaneous Arabic Speech Corpus for Speech Synthesis". In: *Král P., Martín-Vide C. (eds) Statistical Language and Speech Processing. SLSP 2016. Lecture Notes in Computer Science*, vol 9918. Springer, Cham. https://doi.org/10.1007/978-3-319-45925-7_5

Contributi in atti di convegno

1. Z. Mnasri, S. Rovetta and F. Masulli, "A novel pitch detection algorithm based on instantaneous frequency", in 29th European Signal Processing Conference (EUSIPCO 2021), Dublin, Ireland, 23-27 Aug, 2021 (Proceedings ISBN: 978-9-0827-9706-0)

2. S. Rovetta, Z. Mnasri, F. Masulli and A. Cabri, "Audio Surveillance of Road Traffic: An Approach Based on Anomaly Detection and Interval Type-2 Fuzzy Sets", in 19th World

Congress of the International Fuzzy Systems Association (IFSA), 12th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT), and 11th International Summer School on Aggregation Operators (AGOP), DOI: 10.2991/asum.k.210827.059

3. R. A. Bedoui, Z. Mnasri and F. Benzarti, "On the Use of Spectrogram Inversion for Speech Enhancement," *2021 18th International Multi-Conference on Systems, Signals & Devices (SSD)*, 2021, pp. 852-857, doi: 10.1109/SSD52085.2021.9429339.

4. S. Rovetta, Z. Mnasri and F. Masulli, "Detection of Hazardous Road Events From Audio Streams: An Ensemble Outlier Detection Approach," in *IEEE Conference on Evolving and Adaptive Intelligent Systems (EAIS)*, Bari, Italy, 2020, pp. 1-6, doi: 10.1109/EAIS48028.2020.9122704.

5. Z. Mnasri, S. Rovetta and F. Masulli, "Audio surveillance of roads using deep learning and autoencoder-based sample weight initialization," in *IEEE 20th Mediterranean Electrotechnical Conference (MELECON)*, Palermo, Italy, 2020, pp. 99-103, doi: 10.1109/MELECON48756.2020.9140594.

6. Stefano Rovetta, Zied Mnasri, Framcesco Masulli, Alberto Cabri, "Emotion recognition from speech signal using fuzzy clustering". In *Conference of the International Fuzzy Systems Association and the European Society for Fuzzy Logic and Technology (EUSFLAT 2019)*. Atlantis Press. , September, 9-13, 2019, Prague, Czech republic, https://doi.org/10.2991/eusflat-19.2019.19

7. I. H. Ali, Z. Mnasri and Z. Laachri, "Gemination prediction using DNN for Arabic text-to-speech synthesis," *2019 16th International Multi-Conference on Systems, Signals & Devices (SSD)*, 2019, pp. 366-370, doi: 10.1109/SSD.2019.8893275.

8. Ikbel Hadj Ali, Zied Mnasri, Zied Lachriri, "Arabic character diacritization using DNN", in *9th conference on Experimental Linguistics, ExLing9*,August 28-30, 2018, Paris, France, https://doi.org/10.36505/ExLing-2018/09/0011/000344

9. Imène Zangar, Zied Mnasri, Vincent Colotte, Denis Jouvet, "Duration modeling using DNN for Arabic speech synthesis", in *Speech Prosody (SP9)*, June, 10-13, 2018, Poznan, Poland, DOI: 10.21437/SpeechProsody.2018-121

10. Zied Mnasri, Hamid Amiri, "On the relationship between instantaneous frequency and fundamental frequency in speech signal", in *Electronic Speech Signal Processing (ESSV 2018)*, March 07-09, 2018, Ulm, Germany, http://essv2018.de/wp-content/uploads/2018/03/3_Mnasri_ESSV2018.pdf

11. R. Abdelmalek, Z. Mnasri and F. Benzarti, "Optimal Conditions for Signal Reconstruction Based on STFT Magnitude Spectrum," *2018 15th International Multi-Conference on Systems, Signals & Devices (SSD)*, 2018, pp. 1084-1090, doi: 10.1109/SSD.2018.8570580.

12. Amal Houidhek, Vincent Colotte, Zied Mnasri, Denis Jouvet, Imene Zangar, "Statistical modelling of speech units in HMM-based speech synthesis for Arabic", in *8th Language technology conference (LTC 2017)*, Nov 17-19, Poznan, Poland, https://hal.inria.fr/hal-01649034

13. R. Abdelmalek and Z. Mnasri, "High quality Arabic text-to-speech synthesis using unit selection," *2016 13th International Multi-Conference on Systems, Signals & Devices (SSD)*, 2016, pp. 1-5, doi: 10.1109/SSD.2016.7473681

14. Zied Mnasri, Fatouma Boukadida, Noureddine Ellouze, “Prediction of syllabic duration using nonparametric regression for Arabic Text-to-speech synthesis” , in *IEEE conference on Sciences of Electronics, Technologies of Information and Telecommunications*, March, 21-24, 2012, Sousse, Tunisia.

15. Zied Mnasri, Fatouma Boukadida, Noureddine Ellouze, “F_0 contour modeling using a statistical learning technique(MARS)”, in *the 5th IEEE conference on Signal, Systems and Devices (SSD 2011)*, March 22-25, 2011, Sousse, Tunisia.

16. Zied Mnasri, Fatouma Boukadida, Noureddine Ellouze, “Analyse et Synthèse de parole par modélisation sinusoïdale et OLA“ , in *IEEE conference on Sciences of Electronics, Technologies of Information and Telecommunications (SETIT 2005)*, March, 2005, Sousse, Tunisia

Abstracts in atti do convegno

1. Stefano Rovetta, Zied Mnasri, Alberto Cabri, Francesco Masulli, “Open challlenges in speech emotion recognition”, in *Italian workshop on Machine Learning and Data Mining (MLDM'2020)*, Milano, Italy, 25-27 Novembre 2020 .

2. Stefano Rovetta, Zied Mnasri, Francesco Masulli, Alberto Cabri, “Emotion detection from speech in dialog systems: advances and challenges”, in *Workshop on Affective shared perception (WASP’2020)*, Valparaiso, Chile, 30 October, 2020.

3. Zied Mnasri, Stefano Rovetta, Francesco Masulli, “Emotion change detection in audio data streams using machine learning”, in *25th annual international Cyber-Psychology, Cyber-Therapy & Social Networking Conference (CYPSY25)*, Milano, Italy, June, 2020.

4. Zied Mnasri, Andrea Brugnolo, “Toward non-invasive Alzheimer disease diagnosis by voice analysis using machine learning”, in *First Industrial Conference on Artificial Intelligence and Health (ICAIH)*, Milano, Italy, 13-14 Nov 2019.

Enna, il 21/11/2021

Zied Mnasri