

Erfan Loweimi

CONTACT INFORMATION

Speech and Hearing Research Group (SPandH),
Department of Computer Science, University of Sheffield,
141, Regent Court, 211 Portobello, Sheffield, UK, Postcode: S1 4DP

Email: eloweimi1@sheffield.ac.uk
Mobile: +44 (0) 7553 261 989
Tel: +44 (0) 114 222 1800
Fax: +44 (0) 114 222 1810

RESEARCH INTERESTS

Phase-based speech signal processing and recognition
Deep learning
Statistical digital signal processing
Machine learning and statistical pattern recognition

EDUCATION

University of Sheffield, Sheffield, UK

Ph.D., Computer Science, *Expected*: Spring 2017

- Thesis Topic: *Phase-based Speech Signal Processing and Recognition*
- Supervisors: Jon Barker, Reader and Thomas Hain, Professor

Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran

M.Sc., Electronics Engineering, July 2010

- GPA: 17.35 out of 20
- Courses: Automatic Speech Recognition, Digital Signal Processing, Statistical Signal Processing, Advanced Topics in Signal Processing, Biological Signal Processing, Special Topics in Communications (Kalman and Particle Filters), Statistical Pattern Recognition, Neural Networks, Microprocessors II, Seminar
- Thesis Topic: *On the Importance of Phase in Robust Speech Recognition*
- Supervisor: Seyed Mohammad Ahadi, Associate Professor
- Advisor: Hamid Sheikhzadeh, Associate Professor
- Grade: 20 out of 20

Shahid Chamran University of Ahvaz, Ahvaz, Iran

B.Sc., Electronics Engineering, Feb 2007

- GPA: 17.11 out of 20
- Final Project: *Software-Defined Radio*
- Supervisor: Hooman Kaabi, Assistant Professor

PUBLICATIONS

1. E. Loweimi, J. Barker, and T. Hain, "Channel Compensation in the Generalised Vector Taylor Series Approach to Robust ASR". *INTERSPEECH* 2017.
2. E. Loweimi, J. Barker, O. Saz Torralba, and T. Hain, "Robust Source-Filter Separation in the Phase Domain". *INTERSPEECH* 2017.
3. E. Loweimi, J. Barker, and T. Hain, Statistical Normalisation of Phase-based Feature Representation for Robust Speech Recognition, *ICASSP* 2017.
4. E. Loweimi, J. Barker, and T. Hain, Use of Generalised Nonlinearity in Vector Taylor Series Noise Compensation for Robust Speech Recognition, *INTERSPEECH* 2016.

5. E. Loweimi, J. Barker, and T. Hain, Source-filter separation of speech signal in the phase domain, *INTERSPEECH* 2015.
6. E. Loweimi, M. Doulaty, J. Barker, and T. Hain, Long-term statistical feature extraction from speech signal and its application in emotion recognition, *Statistical Language and Speech Processing, SLSP* 2015.
7. E. Loweimi, M. Doulaty, J. Barker, and T. Hain, Emotion recognition from speech signal by effective combination of the generative and discriminative models, *The University of Sheffield Engineering Symposium Conference Proceedings Vol. 2*, vol. 2, 2015.
8. E. Loweimi, J. Barker, and T. Hain, Compression of model-based group delay function for robust speech recognition, *The University of Sheffield Engineering Symposium Conference Proceedings Vol. 1*, vol. 1, 2014.
9. E. Loweimi, S.M. Ahadi, and T. Drugman, A new phase-based feature representation for robust speech recognition, *IEEE International conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2013, May 2013, pp. 7155–7159.
10. E. Loweimi, S.M. Ahadi, T. Drugman, and S. Loveymi, On the importance of pre-emphasis and window shape in phase-based speech recognition, *Lecture Notes in Computer Science*, vol. 7911 LNAI, pp. 160–167, 2013.
11. E. Loweimi, S.M. Ahadi, and H. Sheikhzadeh, Phase-only speech reconstruction using very short frames, *INTERSPEECH* 2011, pp. 2501–2504, ISCA.
12. E. Loweimi and S.M. Ahadi, A new group delay-based feature for robust speech recognition, in *IEEE International conference on Multimedia and Expo (ICME)*, 2011, July 2011, pp. 1–5.
13. E. Loweimi, S.M. Ahadi, and S. Loveymi, On the importance of phase and magnitude spectra in speech enhancement, in *19th Iranian conference on Electrical Engineering (ICEE)*, 2011, May 2011, pp. 1–1.
14. E. Loweimi and S.M. Ahadi, Objective evaluation of phase and magnitude only reconstructed speech: New considerations, in *10th International conference on Information Sciences Signal Processing and their Applications (ISSPA)*, 2010, May 2010, pp. 117–120.
15. E. Loweimi and S.M. Ahadi, Objective evaluation of magnitude and phase only spectrum-based reconstruction of the speech signal, in *4th International Symposium on Communications, Control and Signal Processing (ISCCSP)*, 2010, March 2010.

AWARDS

Faculty PhD Scholarship, Department of Computer Science, University of Sheffield
Fees and a full maintenance stipend at the RCUK rate

TEACHING EXPERIENCE

Teaching Assistant

- Machine Learning and Adaptive Intelligence Fall 2016
Instructor: Yoshi Gotoh
Department of Computer Science, University of Sheffield
- Speech Technology Springs 2016-2017
Instructor: Hain Thomas, Professor
Department of Computer Science, University of Sheffield

- Speech Processing Falls 2015–2016
Instructor: Roger K. Moore, Professor
Department of Computer Science, University of Sheffield
- Data-driven Computing Falls 2014–2015
Instructor: Jon P. Barker, Reader
Department of Computer Science, University of Sheffield
- Electronics II Springs 2006–2007
Instructor: Navid Alaei-Sheini
Electrical Engineering Department, Shahid Chamran University of Ahvaz

PRESENTATIONS

Oral Presentations

- Genie in the mike! The Science of Talking (with) Machines
- A Pint of Science Festival, Sheffield, UK. 15, May, 2017
- Signal Processing is Dead (!)! Long Live DNN!
- Machine Intelligence for Natural Interfaces (MINI) workshop, Sheffield, UK. 12, December, 2016
- Robust Automatic Speech Recognition: A Whirlwind Tour
- Acoustics Exchange Day, Sheffield, UK. 13, September, 2016
- Use of Generalised Nonlinearity in Vector Taylor Series Noise Compensation for Robust Speech Recognition
- SPandH Seminar, Sheffield, UK. 3, August, 2016
- Deep Learning, The End of History and The Last Computer Scientist
- Sheffield Robotics Seminar, Sheffield, UK. 5, July, 2016
- Deep Learning - The Last Computer Scientist
- A Pint of Science Festival, Sheffield, UK. 24, May, 2016
- MINI Feature Extraction Toolkit for Automatic Speech Recognition
- Machine Intelligence for Natural Interfaces (MINI) workshop, Sheffield, UK. 1, December, 2015
- Long-term Statistical Feature Extraction from Speech Signal and its Application in Emotion Recognition
- Statistical Language and Speech Processing (SLSP), Budapest, Hungary. 25, November, 2015
- Source-filter Separation of Speech Signal in the Phase Domain
- UKSpeech 2015, Norwich, UK. 3, July, 2015
- On the Importance of Phase Spectrum in Speech Signal Processing
- SPandH Seminar, Sheffield, UK. 11, November, 2014
- Compression of the Model-based Group Delay Function for Robust Speech Recognition
- University of Sheffield Engineering Symposium (USES), Sheffield, UK. 24, July, 2014
- Ethics in Data Modelling; Love it or Leave it?
- Research Ethics and Integrity module, Engineering Faculty, University of Sheffield, Sheffield, UK. 4, March, 2014

Poster Presentations

- Source-filter separation of speech signal in the phase domain
- INTERSPEECH, Dresden, Germany. 6, Sep., 2015
- Speech Emotion Recognition by Efficient Combination of Generative and Discriminative Models
- Research Retreat, Department of Computer Science, University of Sheffield, Sheffield, UK. 9, Jun., 2015
- A Novel Phase-based Feature Representation for robust speech recognition
- UKSpeech, Edinburgh, UK. 9, Jun., 2014
- Phase-based Speech Signal Reconstruction
- Research Retreat, Department of Computer Science, University of Sheffield, Sheffield, UK. 22, May, 2014

SKILLS

Computer

Python, C/C++, Matlab, Latex, HTK, shell scripting, Linux, Windows, MS Office

Language

English: Fluent

Arabic: Fluent

Persian: Fluent

MEMBERSHIPS

IEEE Student Member
IEEE Signal Processing Society Member
ISCA Student Member

OTHER ACTIVITIES

UKSpeech 2016 Co-organiser, Sheffield, UK 20-21 June 2016
SPandH Seminar Co-organiser Dec 2015-
Chair of one of the sessions in SLSP 2015, Budapest, Hungary 24-26 Nov 2015
Project Facilitator in Transforming Society Summer School, Sheffield, UK 14-26
Jun 2015

REFERENCES

Thomas Hain

Professor of Speech and Audio Technology
Head of SPandH and MINI Research Groups
Department of Computer Science, University of Sheffield, Sheffield, UK
E-mail: t.hain@dcs.shef.ac.uk

Jon Barker

Reader in Computer Science
Department of Computer Science, University of Sheffield, Sheffield, UK
E-mail: j.barker@dcs.shef.ac.uk

Seyed Mohammad Ahadi

Associate Professor
Head of Speech Processing Research Lab (SPRL)
Department of Electrical Engineering
Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran
E-mail: sma@aut.ac.ir