

# Erfan Loweimi

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## CONTACT INFORMATION

Speech and Hearing Research Group (SPandH),  
Department of Computer Science, University of Sheffield,  
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## RESEARCH INTERESTS

Phase-based speech signal processing  
Robust automatic speech recognition  
Deep learning

## 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, *USES 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, *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, *ISCCSP*, March 2010.

#### AWARDS

- Research Communicator of the Year Award, Engineering Research Symposium, University of Sheffield. 30, June, 2017
- Faculty PhD Scholarship, Department of Computer Science, University of Sheffield

#### 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

- Channel Compensation in the Generalised VTS Approach to Robust ASR
  - UKSpeech, Cambridge, UK. 11, September, 2017
  - Interspeech, Stockholm, Sweden. 23, August, 2017
- Robust ASR Using Generalised Vector Taylor Series
  - Engineering Research Symposium, Sheffield, UK. 30, June, 2017
- 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
- Deep Learning, The End of History and The Last Computer Scientist
  - Sheffield Robotics Seminar, Sheffield, UK. 5, July, 2016
  - A Pint of Science Festival, Sheffield, UK. 24, May, 2016
- 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

- Robust Source-filter separation of speech signal in the phase domain
  - Interspeech, Stockholm, Sweden. 21, Aug., 2017
- 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