Weipeng He

Idiap Research Institute, Rue Marconi 19, 1920 Martigny, Switzerland
https://idiap.ch/~whe · heweipeng@gmail.com · +41 27 721 77 71

Research Interests

Acoustic Scene Analysis · Sound Source Localization · Robot Audition · Machine Learning

My research explores acoustic scene analysis in complicated environments with the particular use of deep learning techniques.

Education

École Polytechnique Fédérale de Lausanne (EPFL)   Switzerland
  Ph.D. Candidate   enrolled since 2016
  - Thesis (working title): Audio-Visual Tracking for Multi-Party Human-Robot Interaction
  - Supervisors : Dr. Jean-Marc Odobez and Dr. Petr Motlicek

University of Hamburg   Germany
  M.Sc. in *Intelligent Adaptive Systems*, GPA: 1.38/1.0 (excellent)   September 2015

Tsinghua University   China
  B.E. in *Computer Science and Technology*, GPA: 90/100 (top 10%)   July 2012
  B.S. in *Pure and Applied Mathematics* (second major), GPA: 83/100

Experience

Idiap Research Institute   Switzerland
Research Assistant   June 2016 - Present
  - Investigated deep learning-based method for sound source localization in real human robot interaction scenarios. Achieved more than 90% precision and recall for detecting and localizing multiple simultaneous sources in real-time. [video]

  - Investigated method for simultaneous localization and speech/non-speech classification of multiple sound sources. [video]

National University of Singapore   Singapore
Software Engineer   January - May 2016
  - Developed web interface (back-end) of a business insight information retrieval system.

University of Hamburg   Germany
Research Assistant   October 2012 - November 2015
  - Studied interactive object recognition methods with audio-visual sensory fusion.

Hulu (Beijing)   China
Research Intern   July - September 2012
  - Optimized search engine for fast and error tolerant search with fast approximate string matching.

Publications

- **Joint Localization and Classification of Multiple Sound Sources Using a Multi-task Neural Network. Weipeng He**, Petr Motlicek and Jean-Marc Odobez, *Proc. Interspeech 2018* (**nominated for a best student paper award**) [doi, video]

- **Deep Neural Networks for Multiple Speaker Detection and Localization. Weipeng He**, Petr Motlicek and Jean-Marc Odobez, *2018 IEEE International Conference on Robotics and Automation (ICRA)* [doi, video]

- **Multimodal Object Recognition From Visual and Audio Sequences. Weipeng He**, Haojun Guan and Jianwei Zhang, *2015 IEEE International Conference on Multisensor Fusion and Information Integration for Intelligent Systems (MFI)*

- **What to Do First: The Initial Behavior in a Multi-sensory Household Object Recognition and Categorization System.** Haojun Guan, **Weipeng He** and Jianwei Zhang, *2014 IEEE International Conference on Multisensor Fusion and Information Integration for Intelligent Systems (MFI)*

- **THUNLP at TAC KBP 2011 in Entity Linking.** Yu Zhao, **Weipeng He**, Zhiyuan Liu and Maosong Sun, *Proceedings of TAC, 2011*

Technical Skills

Programming:	Python · C · C++ · Java · MATLAB
Libraries:	PyTorch · Gstreamer · OpenCV · GSL · OpenMP · OpenMPI
Other Tools:	Vim · Bash · LaTeX · GDB · Git · Gnuplot

Languages

English:	TOEFL ibt 106 (reading 29 · listening 27 · speaking 23 · writing 27)
Chinese:	Native Speaker
German:	Basic
French:	Basic

Miscellaneous

Interests:	Snowboarding · Classical Guitar
GitHub:	github.com/hwp (highlighted projects: apkit, notGHMM)