

# AGHILAS SINI

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## Research Interest

Speech and Language Processing, Machine learning.

## Education

### *Academic background*

- 2014            **Master 2 - Artificial Intelligence, Pattern Recognition and Robotics**  
                  *Université Paul SABATIER- TOULOUSE. France*
- 2013            **Master 1 - Real Time Systems Engineering**  
                  *Université Paul SABATIER- TOULOUSE. France*
- 2011            **B.Sc - Control System and Automation**  
                  *Université Mouloud MAMMERI- TIZI OUZOU. Algeria*

### *Workshop and Summer School attended*

- Nov            **Workshop on “Feedback in Pronunciation Training“**  
2015            *Hofgut Imsbach, Northern Saarland, Germany*
- Jul             **Speech Synthesis: Advancement in Modern Speech Synthesis Engines**  
2016            *University of Crete, Heraklion, Crete, Greece*

## Professional Experience

### *As a research engineer*

- Jan    2016    **IFCASL Project (Individualized Feedback for Computer-Assisted Spoken Language Learning)**  
present        *LORIA-INRIA Laboratory Nancy.*  
                  - Automatic pronunciation diagnosis and error detection for Germans learning french  
                  - Modification and re-synthesis of learner audio samples using teacher audio samples based on Pitch Synchronous Overlap and Add algorithm  
                  - Feedback to correct devoicing of final consonants in French spoken by German learners  
                  - Improving speech text alignment for language learning using deep neural network, training network with TensorFlow and decoding with DL4J (IFCASL Corpus)  
                  - Extraction of speech features for pitch detection using deep neural network
- Jan 2016       **Lecturer in Web Programming**  
Mar 2016       *IUT Charlemagne, Université de Lorraine, Nancy*  
                  - JavaScript, Ajax, JQuery. For second year post baccalaureat students
- Nov 2014       **ORTOLANG Project Open Resources and TOols for LANGuage**  
Jan 2016       *LORIA-INRIA Laboratory Nancy.*  
                  - Development of syntactic-semantic analyser tool called J-Safran for spoken documents in French language  
                  - Contributing to development of JTRANS tool for semi-automatic alignment of speech and textual corpus  
                  - Contributing to development of JSnoori an Interactive tool for speech signal processing and phonetics

## ***Internship (Master Thesis)***

Mar 2014      **Mapping of a sound environment for a mobile robot**

Aug 2014      *LORIA-INRIA Laboratory Nancy.*

Control of a mobile robot movements to localize a sound source as quickly as possible. The belief about the source position is represented by a discrete grid and a dynamic programming algorithm was introduced to find the optimal robot motion minimizing the entropy of the grid .

## **Publications**

(1) E. Vincent, A. Sini and F. Charpillet, “Audio source localization by optimal control of a mobile robot,” Acoustics, Speech and Signal Processing (ICASSP), 2015 IEEE International Conference on, South Brisbane, QLD, 2015, pp. 5630-5634.

(2) S. Ghosh, A. Sini, Y. Laprie and C. Fauth, 2016. L1-L2 interference: the case of final devoicing of French voiced fricatives in final position by German learners. To appear in Proceedings of Interspeech 2016, San Francisco.

## **Activities & Independent Courses**

### ***Other Activities***

- Data collection for IFCASL Project
- Member of Deep Learning Discussion Group at LORIA-INRIA
- Volunteer for MRI Data Collections
- Hosted the booth for demonstration of tools in “Village des Sciences“ at LORIA

### ***Online Certificate Courses***

Oct 2015      **Digital Signal Processing**

Dec 2015      *École polytechnique fédérale de Lausanne    taught by Prof. Paolo Prandoni & Martin Vetterli*

Jan 2016      **Data Science Specialisation**

May 2016      *Johns-Hopkins University    by Jeff Leek, Roger D. Peng & Brian Caffo*

## **Computer Skills**

<b>Programming</b>	C, C++, Java, Shell script, Jython, Python
<b>Scientific tools</b>	Matlab/Octave, TensorFlow, R
<b>Web</b>	HTML, CSS, JavaScript, Ajax, JQuery, REST
<b>Data structure</b>	XML, JSON

## **Communication Skills**

<b>French</b>	Fluent
<b>English</b>	Fluent

## **References**

**Denis Jovet**      Research Director, INRIA Multispeech  
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**Yves Laprie**      Research Director, CNRS Multispeech  
yves.laprie@loria.fr