

# AGHILAS SINI

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## Research Interest

Speech and Language Processing, Machine learning.

## Education

### *Academic background*

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

### *Workshop attended*

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| Nov<br>2015 | <b>Workshop on “Feedback in Pronunciation Training“</b><br><i>Hofgut Imsbach, Northern Saarland, Germany</i> |
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### *Summer School attended*

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| Jul<br>2016 | <b>Speech Synthesis :Advancements in Modern Speech Synthesis Engines</b><br><i>University of Crete, Heraklion, Crete, Greece</i> |
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## Professional Experience

### *As an engineer*

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| Jan 2016<br>present  | <b>IFCASL Project (Individualized Feedback for Computer-Assisted Spoken Language Learning)</b><br><i>LORIA-INRIA Laboratory Nancy.</i> <ul style="list-style-type: none"><li>- Automatic pronunciation diagnosis and error detection for germans learning french</li><li>- Modification and re-synthesis of learner audio samples using teacher audio samples based on Pitch Synchronous Overlap and Add algorithm</li><li>- Feedback to correct devoicing of final consonants in French spoken by German learners</li><li>- Improving speech text alignment for language learning using deep neural network, training network with TensorFlow and decoding with DL4J (IFCASL Corpus)</li><li>- Extraction of speech features for pitch detection using deep neural network</li></ul> |
| Jan 2016<br>Mar 2016 | <b>Lecturer in Web Programming</b><br><i>IUT Charlemagne, Université de Lorraine, Nancy</i> <ul style="list-style-type: none"><li>- JavaScript, Ajax, JQuery. For second year post baccalaureat students</li></ul>  |
| Nov 2014<br>Jan 2016 | <b>ORTOLANG Project Open Resources and TOols for LANGuage</b><br><i>LORIA-INRIA Laboratory Nancy.</i> <ul style="list-style-type: none"><li>- Development of syntactic-semantic analyser tool called J-Safran for spoken documents in French language</li><li>- Contributing to development of JTRANS tool for semi-automatic alignment of speech and textual corpus</li><li>- Contributing to development of JSnoori an Interactive tool for speech signal processing and phonetics</li></ul>  |

## ***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. Charpillat, “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) Ghosh, S., Sini, A., Laprie, Y. & Camille Fauth, C. 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**

<b>Denis Juvet</b>	Research Director, INRIA Multispeech denis.juvet@inria.fr
<b>Yves Laprie</b>	Research Director, CNRS Multispeech yves.laprie@loria.fr