

# Léo VARNET

**Born:** 12/04/1988 in Grenoble (France)

**Professional address:**

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## → Education and qualifications:

2013 - 2015 **PhD in Neuroscience**, Lyon 1 University (funded by the Neurosciences and Cognition Doctoral School). Thesis title: "Identification of acoustic cues used in degraded speech comprehension". Supervisors: M. Hoen & F. Meunier. ([thesis](#)).

2010 - 2011 **Master's Degree in Cognitive Science** in Grenoble (Grenoble INP, Joseph Fourier University) (double curriculum Engineering/Master of science).

2008 - 2011 **Signal Processing Engineer**: student in the engineer school **Phelma, Grenoble INP**, specialization in "Signal and Image Processing, Communication Systems, Multimedia".

2006 - 2008 Preparatory classes for admission to the French "Grandes Ecoles", in mathematics and physics (Lycée Champollion, Grenoble).

2006 Baccalauréat S (High School Diploma in Sciences).

## → Employment history:

2016 - ... **Postdoctoral fellow** at the Département d'Etude Cognitive (DEC, UMR CNRS 8248, LSP) of the Ecole Nationale Supérieure (ENS) Paris: linking the earliest language acquisition mechanisms to basic auditory perception; Exploring listening strategies of Hearing Impaired listeners during speech perception; Modeling the perception of amplitude and frequency modulations. (advisor: C. Lorenzi).

2012 - 2013 One-year **CNRS engineer** position at the Lyon Neuroscience Research Center, (CRNL, UMR5292/U1028), in the Brain Dynamics and Cognition Team (dir. O. Bertrand).

2011 **6-month end-of-studies internship** for the SpiN Project Team: identifying time-frequency areas in the oscillatory cortical activity correlated with the intelligibility of degraded speech. (dir. M. Hoen and F. Meunier)

2010 **3-month internship** at GIPSA-lab (Image, Speech, Signal, Control Laboratory of Grenoble, France): implementation of a "Brain Invaders" videogame, using a Brain-Computer Interface based on the P300 Speller paradigm (dir. M. Congedo and B. Rivet)

## → Teaching:

- 2015 Public lecture in Lyon 1 University: *Identification des indices acoustiques utilisés lors de la compréhension de la parole dégradée*. ([video](#))
- 2012 - 2015 **Teacher assistant** in charge of practicals in Polytech Lyon (C++ programming / statistics / speech processing).
- 2012 Organization and presentation of an introductory 2-hours **course for FieldTrip** (Matlab software toolbox for MEG and EEG analysis), at SBRI Inserm U846, Lyon.

## → Other formations and experiences:

- 2015 **Organization** of the general public conferences **Pint of Science** in Lyon, 18-20 may ([link](#)).
- 2013 **Designing and webmastering** of the CRNL students' website.
- Organization of a conference-debate** as part of the "CRNL seasons": « *From the repaired brain to the enhanced brain: What prospects?* ».
- 2008 - 2009 Student representative to the Grenoble INP Board of Directors.

## → Skills and foreign languages:

Programming expertise: **Matlab** (including FieldTrip toolbox for MEG and EEG analysis), **C**, **C++** (including 3D-programming with OGRE3D), **Java**, **LaTeX**, **CamI**, **R**.

Software expertise: **OPENViBE**, **Presentation**.

Languages: native **French**, good working level in **English** (TOEFL), Basic knowledge of **German**

## → Peer-Reviewed Journal Articles

- 2016 • **Varnet, L.**, Meunier, F., Trollé, G., Hoen, M. (2016). Direct Viewing of Dyslexics' Compensatory Strategies in Speech in Noise Using Auditory Classification Images. *PLoS ONE*, 11(4). ([full-text paper](#))
- 2015 • **Varnet, L.**, Tianyun, W., Peter, C., Meunier, F., Hoen, M. (2015). How musical expertise shapes speech perception: evidence from auditory classification images. *Scientific Reports*, 14489. doi:10.1038/srep14489. ([full-text paper](#))
- **Varnet, L.**, Knoblauch, K., Serniclaes, W., Meunier, F., Hoen M. (2015). A Psychophysical Imaging Method Evidencing Auditory Cue Extraction during Speech Perception: A Group Analysis of Auditory Classification Images. *PLoS ONE*, 10(3):e0118009. doi:10.1371/journal.pone.011800. ([full-text paper](#))
- 2014 • Ménoret, M., **Varnet, L.**, Fargier, R., Cheylus, A., Curie, A., des Portes, V., Nazir, T. A., Paulignan, Y. (2014). Neural correlates of non-verbal social interactions: a Dual-EEG study, *Neuropsychologia*, 55:85-97. ([abstract](#))
- 2013 • **Varnet, L.**, Knoblauch, K., Meunier, F., Hoen, M. (2013). Using auditory classification images for the identification of fine acoustic cues used in speech perception. *Frontiers in Human Neuroscience*, 7:865. doi: 10.3389/fnhum.2013.00865. ([full-text paper](#))

## Proceedings and oral communications:

- 2015
- **Varnet, L.**, Serniclaes, W., Knoblauch, K., Meunier, F., Hoen, M. (2015) Auditory Classification Images: Finding the acoustic cues used in a phoneme categorization task. In *Proceedings of the Doctoral School Neuroscience and Cognition annual scientific meeting 2015*, 7.
- 2014
- **Varnet, L.**, Serniclaes, W., Knoblauch, K., Meunier, F., Hoen, M. (2014). Identification of functional acoustic cues involved in speech perception: recent advances using Auditory Classification Images. In *Society for the Neurobiology of Language Conference Proceedings, 201-202*. ([proceedings](#))
  - Wang, T., **Varnet, L.**, Peter, C., Estivalet, G., Meunier, F., Hoen, M. (2014). How does musical expertise shape speech perception? Visual evidence from Auditory Classification Images. In *Society for the Neurobiology of Language Conference Proceedings, 202*. ([proceedings](#))
  - Madden Lombardi, C., Hoen, M., **Varnet, L.**, Jouen, A.-L., Dominey, P. F. (2014). Event Roles and Temporal Structure: Electrophysiological correlates of grammatical verb aspect processing. In *Society for the Neurobiology of Language Conference Proceedings, 148-149*. ([proceedings](#))
  - **Varnet, L.**, Trollé, G., Serniclaes, W., Knoblauch, K., Meunier, F., Hoen, M. (2014). Auditory classification images: How noise can reveal the acoustic cues used in phoneme categorization. In *proceedings of the 6<sup>th</sup> Speech in noise Workshop*. ([presentation](#))
- 2013
- **Varnet, L.**, Knoblauch, K., Meunier, F., Hoen, M. (2013). Show me what you listen to! Auditory classification images can reveal the processing of fine acoustic cues during speech categorization. In *proceedings of the 14th Annual Conference of the International Speech Communication Association*. ([full-text paper](#))
- 2012
- Pota, S., Spinelli, E., **Varnet, L.**, Hoen, M., Meunier, F. (2012). The critical status of word-initial syllable in the on-line processing of speech: a MMN study. In *Neurobiology of Language Conference 2012 Abstracts, 44-45*. ([proceedings](#))
  - **Varnet, L.**, Meunier, F., & Hoen, M. (2012). Oscillations corticales et intelligibilité de la parole dégradée. In *Actes de la conférence conjointe JEP-TALN-RECITAL, 1*, 673-680. ([full-text paper](#))
  - Pota, S., Spinelli, E., Boulenger, V., Ferragne, E., **Varnet, L.**, Hoen, M., & Meunier, F. (2012). La mie de pain n'est pas une amie : une étude EEG sur la perception de différences infraphonémiques en situation de variations. In *Actes de la conférence conjointe JEP-TALN-RECITAL, 1*, 859-866. ([full-text paper](#))
  - **Varnet, L.**, Meyer, J., Hoen, M., & Meunier, F. (2012). Phoneme resistance during speech-in-speech comprehension, *13th Annual Conference of the International Speech Communication Association*. ([full-text paper](#))
  - **Varnet, L.**, Hoen, M., & Meunier, F. (2012). Oscillatory cortical activity and intelligibility of degraded speech. *4<sup>th</sup> Speech in Noise Workshop, January 5-6, 2012, Cardiff, Wales*.
- 2011
- Congedo, M., Goyat, M., Tarrin, N., Ionescu, G., **Varnet, L.**, Rivet, B., Phlypo, R., Jrad, N., Acquadro, M., & Jutten C. (2011). 'Brain Invaders': a Prototype of an Open-Source P300-Based Video Game Working with the OpenViBE Platform. In *Proceedings of the 5th International BCI Conference*, 280-283. ([full-text paper](#))