

Léo VARNET

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

Professional address:

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→ Education and qualifications:

- 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) with first-class honours.

→ Employment history:

- 2013 - 2015 **PhD in Cognitive Sciences** (funded by the Neurosciences and Cognition Doctoral School). Thesis title: "Identification of acoustic cues used in degraded speech comprehension". Supervisors: M. Hoen & F. Meunier.
- 2012 One-year **CNRS engineer** position at the Lyon Neuroscience Research Center, (UMR5292/U1028), 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:

- 2012 - 2015 **Teacher assistant** in charge of practicals in Polytech Lyon (C++ programming, statistics and 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:

- 2013 **Designing and webmastering** of the CRNL students' website (<http://etu.crnl.cnrs.fr/>). **Organization of a conference-debate** as part of the "CRNL seasons": « *From the repaired brain to the enhanced brain: What prospects?* ».
- 2011 Participation in 5-day course on « Electrophysiological methods (EEG, MEG) applied to research in cognitive and clinic science », organized by LPNC in Grenoble
Participation in 3-day course on R software « analysis of variance : Practice and interpretation », organized by the Doctoral School "Neurosciences and Cognition" in Lyon.
- 2008 - 2009 Student representative to the Grenoble INP Board of Directors.
- 1998 - 2010 Classical accordion training at Grenoble Regional Conservatory (with J.-L. Manca).

→ Skills and foreign languages:

Programming expertise: **C, C++** (including 3D-programming with OGRE3D), **Java**
Software expertise: **Matlab** (including **FieldTrip** toolbox for MEG and EEG analysis), **OPENVIBE, Presentation, R**.
Languages: native **French**, good working level in **English** (TOEFL), Basic knowledge of **German**

→ Peer-Reviewed Journal Articles

- 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
(<http://www.nature.com/articles/srep14489>)
 - **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
(<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0118009>)
- 2014
- Ménoiret, 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.
- 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
(<http://journal.frontiersin.org/article/10.3389/fnhum.2013.00865/abstract>)

→ Proceedings and oral communications:

- 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.
(http://www.neurolang.org/?page=poster_detail&id=460)

- 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*. (http://www.neurolang.org/?page=poster_detail&id=461)
- 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*. (http://www.neurolang.org/?page=poster_detail&id=463)
- **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 6th Speech in noise Workshop*. (http://www.phon.ucl.ac.uk/events/spin2014/docs/o08_Varnet2014.pdf)
- 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*.
- 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*. (http://www.neurolang.org/programs/NLC2012_Abstracts.pdf)
- **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. (<http://www.jeptaln2012.org/actes/JEP2012/pdf/JEP2012085.pdf>)
- 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. (<http://www.jeptaln2012.org/actes/JEP2012/pdf/JEP2012108.pdf>)
- **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*. (http://www.lemondessiffle.free.fr/scope/docswordpdfs/495_Paper.pdf)
- **Varnet, L.**, Hoen, M., & Meunier, F. (2012). Oscillatory cortical activity and intelligibility of degraded speech. *4th 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. (http://bci.tugraz.at/BCI2011/Proceedings_5th_International_BCI_Conference_2011_Graz.pdf)