BERTRAND HIGY
Postdoctoral Fellow

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http://bhigy.github.io
https://github.com/bhigy

LANGUAGES

Language	Level
French	■■■■■
English	■■■■□
Italian	■■■■□
German	■■□□□
Dutch	■□□□□

PROGRAMMING

Skill	Level
Python	■■■■□
Shell scripting	■■■■□
Pytorch	■■■■□
Tensorflow	■■■□□
Kaldi	■■■□□
HTK	■■■□□
ESPnet	■■□□□
Git	■■■□□
Vim	■■■□□
Arduino	■■□□□

INTERESTS

Hiking, Board Games, Books

Education

Professional experience

Postdoctoral fellow, 06/19 - 07/21
Tilburg University, Tilburg, Netherlands

Subject: Understanding visually grounded spoken language via multi-tasking
Principal Investigators: Grzegorz Chrupała, Afra Alishahi

PhD student, 11/15 - 04/19
Istituto Italiano di Tecnologia, Genoa, Italy

Subject: Spoken command recognition for robotics
Supervisors: Giorgio Metta, Leonardo Badino

Visiting student, 04/18 - 07/18
Centre for Speech Technology Research, Edinburgh, UK

Supervisor: Peter Bell

Research Assistant, 05/15 - 10/15
Istituto Italiano di Tecnologia, Genoa, Italy

Subject: Haptic object recognition for the robot iCub
Supervisor: Lorenzo Natale

Software engineer, 12/10 - 04/15
Abase Europe, Strasbourg, France

Technologies: SAP, ABAP, C#, Java, HTML, Javascript, JQuery

Master degree in Cognitive Sciences, 09/08 - 06/10
Université Lumières, Lyon, France

First in my class

1st year internship under the supervision of Emmanuel Reynaud on
Connectionist modeling of multimodal integration

2nd year internship under the supervision of Salima Hassas on
Collective representations, language and tagging systems

Teaching assistant in Computer Science, 09/09 - 01/10
Université Lumières, Lyon, France

Bachelor degree in Psychology, 09/05 - 06/08
Université Louis Pasteur, Strasbourg, France

Experimental assistant, 01/08 - 04/08
Laboratoire d'Imagerie et Neurosciences Cognitives (LINC), Strasbourg, France

EEG study on sleep and attention

Bachelor degree in Computer Science, 09/03 - 06/06
Université Louis Pasteur, Strasbourg, France

First in my class

Publications

Higy, B., Gelderloos, L., Alishahi, A., & Chrupała, G. "**Discrete representations in neural models of spoken language**". http://arxiv.org/abs/2105.05582, 2021.

Higy, B., Elliott, D., & Chrupała, G. "**Textual Supervision for Visually Grounded Spoken Language Understanding**". Findings of the Association for Computational Linguistics: EMNLP 2020, 2698–2709.

Chrupała, G., **Higy, B.**, & Alishahi, A. "**Analyzing Analytical Methods: The Case of Phonology in Neural Models of Spoken Language**". In Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics. Seattle, WA, USA, 2020.

Higy, B., & Bell, P. "**Few-shot learning with attention-based sequence-to-sequence models**". http://arxiv.org/abs/1811.03519, 2018.

Higy, B., Mereta, A., Metta, G., & Badino., L. "**Speech Recognition for the ICub Platform**". Frontiers in Robotics and AI 5, 2018.

Savran, A., Tavarone, R., **Higy, B.**, Badino, L., & Bartolozzi, C. "**Energy and Computation Efficient Audio-Visual Voice Activity Detection Driven by Event-Cameras**". In Proceedings of 13th IEEE International Conference on Automatic Face Gesture Recognition. Xi'an, China, 2018.

Higy, B., Ciliberto, C., Rosasco, L., & Natale., L. "**Combining Sensory Modalities and Exploratory Procedures to Improve Haptic Object Recognition in Robotics**". In IEEE-RAS 16th International Conference on Humanoid Robots (Humanoids), 117–24. Cancun, Mexico, 2016.

Theses

Higy, B. "**Spoken command recognition for robotics**". PhD thesis. Università degli studi di Genova, 2019.

Higy, B. "**Collective representations, language and tagging systems**". MA 2nd year thesis (in French), 2010.

Higy, B. "**Connectionist modeling of multimodal integration**". MA 1st year thesis (in French), 2009.

Teaching and supervision experience

Master's thesis supervision, Fall 2020
Tilburg University, supervision of thesis students for the Master's program in Data Science and Society

Deep learning, Fall 2019
Tilburg University, teaching assistant, designed and supervised practical sessions

Computer Science, Fall 2009
University Lyon 2, teaching assistant, supervised practical sessions

Dissemination

Lightning talk at ATILA'19 conference on the topic "Understanding visually grounded spoken language via multi-tasking"

Honors

Merit scholarship from the French Ministry of Education, 2006-2010 (1800€/school year)
Higher education scholarship open to the 20% most successful students.

Higher education scolarship from the Foundation François Schneider Wattwiller, 2003 (2000€)
Scholarship to support students willing to pursue higher education.

Research Interests

- Spoken and Natural language processing
- Interpretability of neural networks
- Computational modeling of language acquisition
- Language grounding and multimodal learning
- Developmental robotics.

Professional activities and Society memberships

Reviewer for ACL, EMNLP, EACL, NAACL, CoNLL.

Memberships
Association for Computational Linguistics (ACL)
Cognitive Science Society (CogSci)

Co-organizer of the Colleague Colloquium Series, informal talks within the Department of Cognitive Science and Artificial Intelligence at Tilburg University.

Training

Introduction to convex optimization, 2018
Taught by Saverio Salzo and Silvia Villa, at University of Genoa, Italy

Barcelona Cognition, Brain and Technology summer school, 2017
in Barcelona, Spain

International Summit and Summer School on Deep Learning 2017
in Bilbao, Spain

Artificial Cognitive Systems, 2017
Taught by David Vernon, at the Italian Institute of Technology

Neurophysiology of the Sensory Systems and Multisensory Integration, 2017
Taught by Monica Gori, at the Italian Institute of Technology

RegML 2016
Regularization Methods for Machine Learning
Taught by Prof. Lorenzo Rosasco, at University of Genoa, Italy

Brains, Minds and Machines Workshop, 2016
in Sestri Levante, Italy

MLCC 2015
A Machine Learning Crash Course
Taught by Prof. Francesca Odone and Lorenzo Rosasco, at University of Genoa, Italy