Maureen de Seyssel

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EDUCATION

PhD candidate in Computational Cognitive Science October 2020 - present
Laboratoire de Sciences Cognitives et Psycholinguistique, CoML Team, École Normale Supérieure
Laboratoire de Linguistique Formelle, Université de Paris

DISSERTATION TOPIC: "Does multilingual input help or hinder early language acquisition? A computational modelling approach" | Supervisors: Dr. Emmanuel DUPOUX & Dr. Guillaume WISNIEWSKI

- Focus on language acquisition processes for children raised in bilingual environments.
- Reverse engineering approach : use of computational models of speech and language using the same input as children in order to infer hypotheses on the human cognitive processes
- Unsupervised and semi-supervised models of speech and language processing, including using multilingual input.

MSc in Speech and Language Processing · Distinction 2016-2017
University of Edinburgh

- Focus on Speech Technology and Natural Language Processing.
- Program co-taught between the Informatics and Linguistics departments.
- Courses include: Automatic Speech Recognition, Speech Synthesis, Natural Language Understanding, Machine Translation, Computational Cognitive Neuroscience

DISSERTATION TOPIC: "Active learning for training data selection for Automatic Speech Recognition using Unreliable Transcriptions" | Supervisor: Dr. Peter BELL. In collaboration with Quorate Technology Limited
Focus on the use of active learning for speech recognition data which labelled, when available, are only rough transcriptions of the spoken data.

BSc in Psychology (Hons) · First Class Honours 2013-2016
City, University of London

- Focus on cognitive sciences and neurosciences

DISSERTATION: "The Role of Statistical and Crosslinguistic Prosodic Cues in Segmenting Groups of Words" | Supervisor: Dr. Ansgar ENDRESS
Focus on cognitive and computational processing aspects of language in word segmentation

WORK EXPERIENCE

Research Intern November 2019 - September 2020
Laboratoire de Sciences Cognitives et Psycholinguistique, CoML Team
École Normale Supérieure

- Research on Language Identification (LID) processes in language acquisition for infants raised in bilingual environments. Modelling of LID processes, currently focusing on i-vectors systems.
- Design of linguistic tests for unsupervised speech representation computational models.

Research Engineer in Automatic Speech Recognition April 2019 - October 2019
Qwant Research

- In charge of the research in Automatic Speech Recognition.
- Creation of a French prototype ASR system with very scarce data, all open-source.
- Research on the data anonymisation processes in a speech recognition system.
- Qwant Research is the research-focused subsidiary company of the search engine Qwant. State-of-the-art research is covered in a variety of domains including NLP, Speech, Vision .

Speech Scientist October 2017 - March 2019
Quorate Technology Limited

- In charge of the Acoustic Modelling research and development division. Creating state-of-the-art domain-adapted acoustic models for speech recognition.
- Advanced experience with the Kaldi open-source toolkit.
- Quorate Technology is a spin-out from the University of Edinburgh, and still tightly collaborates with the Centre of Speech and Technology Research, leading to state of the art academic research.

Research Assistant · voluntary position 2015-2016
City, University of London, with Dr. Ansgar Endress

- Cognition and Development Centre (CDC)
- Research, data analysis and experimental design in the cognitive fields of Working Memory and Language Acquisition.

SKILLS

Programming languages:	Python, Matlab, R, Bash
Toolkits:	Kaldi, Tensorflow, HTK, NLTK, Theano, Festival
Skills:	Natural Language Processing, Neural Networks, Machine Learning, Machine Translation, Speech Recognition, Speech Synthesis, Statistics, Computational Cognition
Industry skills:	Agile, AWS, Git, Docker, Jira
Languages:	French (native), English (fluent), Spanish (good working knowledge)

PUBLICATIONS

- de Seyssel, M. & Dupoux, E. (In press). Does bilingual input hurt? A simulation of language discrimination and clustering using i-vectors. In *Proceedings for the Annual Meeting of the Cognitive Science Society 2020.*
- Maudet, E., Cattan, O., de Seyssel, M., & Servan, C. Qwant Research@ DEFT 2019: appariement de documents et extraction d'informations à partir de cas cliniques. *DEFT*, 67.

CURRENT RESEARCH INTERESTS

Prime focus in areas of speech technology, including:

- Interactions between **active learning and unreliable data/transcripts** in speech recognition
- **Non-supervised multilingual** speech recognition
- **Language acquisition processes in multilingual environments** and modelling of such processes in a reverse-engineering approach to gain further insights on the underlying cognitive mechanisms