



Sebastien Montella

A.I. RESEARCHER · NATURAL LANGUAGE PROCESSING

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📧 montellasebastien | 🎓 Sebastien Montella

"I hear, and I forget. I see, and I remember. I do, and I understand." - Confucius

French ●●●●● English ●●●●● Chinese ●●●●● German ●●●●●

Work Experience

Orange Labs

Lannion, France

INDUSTRY DOCTORAL RESEARCHER

Nov. 2019 - Nov. 2022

- Investigating the Effect of Relative Positional Embeddings on AMR-to-Text Generation using Structural Adapters.
Keywords: *Transformers, AMR-to-Text, Relative Position Embeddings, Graph Encoding.*
- Hyperbolic (Temporal) Knowledge Graphs Embeddings for Link Prediction. New state-of-the-art performances with fewer dimensions.
Keywords: *Temporal Knowledge Graph, Link Prediction, Hyperbolic Geometry.*
- Participation to the WebNLG-2020 Challenge consisting in verbalizing knowledge triples. Significant boost in BLEU scores with pre-training.
Keywords: *Transformers, Graph-to-Text, Data Augmentation, Denoising Auto-Encoder.*

Orange Labs

Belfort, France

RESEARCH INTERN

Feb. 2019 - Aug. 2019

- Identifying whether a connected object is inside or outside a building (Binary Classification) using CSI measurements in a 5G / LTE-M context. Performances improved by 10%.
Keywords: *Python, PyTorch, scikit-learn, Naïve Bayes, k-NN, Gradient Boosting, SVM, Advanced Dimensionality Reduction, BERT.*
- Study of indoor localization in static and dynamic scenarios in large building using CSI data with different bandwidth. Comparison with state-of-the-art methods.
Keywords: *Neural Nets, Deep Belief Network, Convolutional Neural Network, Gated Mechanism, Multi-tasking.*

Web Intelligence and Data Mining Lab

Zhongli, Taiwan

RESEARCH ASSISTANT

Sept. 2016 - Feb. 2019

- Build a generative model to generate emotionally-consistent response given a social post to show empathy to the user.
Keywords: *Python, PyTorch, Encoder-Decoder architecture, Bidirectional RNNs, Attention mechanism, Words Embedding, Autoencoder, GAN, SeqGAN, StarGAN, Reinforcement Learning, Policy Gradient, CNNs, Gated Mechanism.*
- Academic-Industrial Cooperation with the branding VERSO Agency. Social media mining and sentiment analysis on Facebook groups for precision marketing.
Keywords: *R, Facebook API, PostgreSQL, Solr, Crawlers, Information Extraction and Retrieval.*
- Academic-Industrial Cooperation with Institute for Information Industry (Taiwan) on Machine Learning application on Recommendation System.
Keywords: *RNN, LSTM, GRU.*

Education

AMU (Aix-Marseille University)

Lannion/Marseille, France

INDUSTRIAL PH.D. IN COMPUTER SCIENCE AND INFORMATION ENGINEERING

Nov. 2019 - (est.) Nov. 2022

- Thesis Topic: Neural Graph-to-Text Generation: Comparing Euclidean and Riemannian Graph Encoding

NCU (National Central University)

Zhongli, Taiwan

MASTER IN COMPUTER SCIENCE AND INFORMATION ENGINEERING

Sept. 2016 - Jul. 2019

- Master Thesis: Emotionally-Trigged Short Text Conversation using Attention-Based Sequence Generation Models
- GPA: 4.0/4.0 Ranked: 2/123

BFA (Beijing Film Academy)

Beijing, China

CHINESE LANGUAGE PROGRAM

Feb. 2018 - Aug. 2018

- Intensive Chinese Courses
- Level: Intermediate (HSK4) Ranked: 1st

UTBM (University of Technology of Belfort-Montbéliard)

Belfort, France

MASTER IN COMPUTER SCIENCE

Sept. 2013 - Sept. 2019

- Programming & basics of computer science

Programming Skills

PROGRAMMING LANGUAGE: PYTHON, R, C++, JAVA, C, HTML, SQL, LaTeX

DEVELOPMENT TOOLS: GIT, BASH, UBUNTU (LINUX), WINDOWS

PACKAGES: PYTORCH, TENSORFLOW, KERAS, SCIKIT-LEARN, HUGGING FACE TRANSFORMERS, FAIRSEQ, PANDAS, NUMPY, MATPLOTLIB, SEABORN, GENSIM, FACEBOOK API, POSTGRES SQL, SOLR, SELENIUM

Volunteering

CO-ORGANIZER OF THE 18th WORKSHOP ON SPOKEN DIALOGUE SYSTEMS FOR PHDs, POSTDOCS & NEW RESEARCHERS (YRRSDS) IN EDINBURGH, SCOTLAND (2022).

CO-ORGANIZER OF THE “Doctoral Day” IN LANNION, FRANCE (2022)

INVITED SPEAKER AT THE NL4XAI SPRING SCHOOL IN NANCY, FRANCE (2022).

REVIEWER AT THE *Natural Language Generation Track* OF THE EMPIRICAL METHODS IN NATURAL LANGUAGE PROCESSING (EMNLP) CONFERENCE (2022).

(DATASET) CONTRIBUTOR TO THE GEMv2 MULTILINGUAL NLG BENCHMARKING ENVIRONMENT PACKAGE.

VOLUNTEER AT THE INTERNATIONAL CONFERENCE ON LANGUAGE RESOURCES AND EVALUATION (LREC) AT MARSEILLE, FRANCE (2022)

Publications

Journal Articles

- [1] **Sébastien Montella**, Brieuc Berruet, Oumaya Baala, Valéry Guillet, Alexandre Caminada, Frédéric Lassabe, “A Funnel Fukunaga-Koontz Transform for Robust Indoor-Outdoor Detection Using Channel State Information in 5G IoT Context”, *IEEE Internet of Things Journal* (2022)

Peer-Reviewed Conference Papers

- [1] **Sébastien Montella**, Alexis Nasr, Johannes Heinecke, Frederic Bechet, Lina M Rojas-Barahona, “Investigating the Effect of Relative Positional Embeddings on AMR-to-Text Generation using Structural Adapters”, (*under review*)
- [2] **Sébastien Montella**, Lina Rojas-Barahona, Johannes Heinecke, “Hyperbolic Temporal Knowledge Graph Embeddings with Relational and Time Curvatures”, *Findings of ACL* (2021)
- [3] **Sébastien Montella**, Chia-Hui Chang, Frédéric Lassabe, “Emotionally-Trigged Short Text Conversation using Attention-Based Sequence Generation Model”, *Proceedings of NTCIR-14 Conference, Tokyo, Japan* (2019)
- [4] Yu-Ching Chen, Chia-Ching Yang, Yu-Han Chen, **Sébastien Montella**, Chia-Hui Chang, Pin-Liang Chen, Ping-Che Yang, Tsun Ku, “Structured Learning Applied to Consumer Goods Recommended”, *Proceedings of the 2017 Conference on Technologies and Applications of Artificial Intelligence, Taiwan* (2017)
- [5] Yu-Han Chen, **Sébastien Montella**, Wei-Han Chen, Chia-Hui Chang, “WIDM at the NTCIR-13 STC-2 Task”, *Proceedings of NTCIR-13 Conference, Japan* (2017)

Workshop Papers

- [1] **Sébastien Montella**, Lina M Rojas-Barahona, Frederic Bechet, Johannes Heinecke, Alexis Nasr, “Transfer Learning and Masked Generation for Answer Verbalization”, *Structured and Unstructured Knowledge Integration (SUKI) Workshop at NAACL* (2022)
- [2] **Sébastien Montella**, Betty Fabre, Tanguy Urvoy, Johannes Heinecke, Lina Rojas-Barahona, “Denoising Pre-Training and Data Augmentation Strategies for Enhanced RDF Verbalization with Transformers”, *WebNLG2020 Workshop at INLG* (2020)

Demo Papers

- [1] Sebastian Gehrmann et al. (**76 authors**), “GEMv2: Multilingual NLG Benchmarking in a Single Line of Code”, (*under review*)