Vincent Roger

Data Scientist

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Skills

Data Science

- Supervised, non-supervised and semi-supervised learning:
  - Deep Neural Network for images and audios.
  - Few-shot techniques (Siameses, Meta-learning, ...).
  - Sequence learning: RNN, GRU, HMM. Used on audios.
  - Representation learning using Generative models such as GAN, VAE or DPGMM
- Signal processing on images and sounds.

Management

- Collaborative work (supervise meetings)
- Respect of due times (to publish)
- Risk Management (measure choices)

Linguistic

- French ●●●●●
- English ●●●●○

Publications

Vincent Roger, Marius Bartcus, Faicel Chamroukhi, and Hervé Glotin. Unsupervised bioacoustic segmentation by hierarchical dirichlet process hidden markov model. In *Multimedia Tools and Applications for Environmental & Biodiversity Informatics*, pages 113–130. Springer, 2018.

Glotin Herve, Marius Bartcus, Vincent Roger, Faicel Chamroukhi, Patris Julie, Juniper Kim, Giraudet Pascale, Knopp Jennie, Westdal Kristin, and Porta Louie. Scaled unsupervised arctic bioacoustics: Joint narwhal call & click train indexing. *LSIS research Report, for Victoria University*, January 2016.

Hélène Fargier, Frédéric Maris, and Vincent Roger. Temporal constraint satisfaction problems and difference decision diagrams: A compilation map. In *27th IEEE International Conference on Tools with Artificial Intelligence (ICTAI 2015)*, pages pp. 429–436, Vietry sul mare, IT, 2015. IEEE.

Work Experience

PhD, in progress, **IRIT** **Toulouse**, 2018–now
Creating an Automatic System of Intelligibility Measurement (SAMI) to help following-up patients with oral cancer. Project linked to C2SI (Carcinologic Speech Severity Index Project). It involves usage of clinical data and use of recent machine learning algorithms. My supervisors are Julien PINQUIER and Jérôme Farinas from the SAMOVA team.

Study Engineering, two years, **LIS** **Toulon**, 2016–2018
It consisted in learning models adapted to bioacoustic signals. Learned models adapted to classification of 1500 birds. Use of deep neural network and probabilistic model to learn embeddings of cetacean sounds (high dimensionality data).

Study Engineering, teen months, **LIS - TVT Innovation** **Toulon**, 2015-2016
Model environmental bioacoustics using generative models. I wrote a report on narwhals.

Study Engineering, five months, **IRIT** **Toulouse**, 2015
Compilation of Temporal Constraint Satisfaction Problem (TCSP) - application in temporal planning. Theoretical analyses and experiments on different representations of temporal languages. Internship done in ADRIA team. Paper published at ICTAI.

Junior Software Engineer, four months, **LAAS** **Toulouse**, 2014
Redesign of tools for managing humanoid movements, articulations, bodies and position of a robot in space. Results: modernized tools for task management. Internship done in GEPETTO team.

Junior Software Engineer, two months, **IRIT** **Toulouse**, 2013
Production of a software for automatic transcription (in real time) of audio-video content (multiple flux). Results:

The tool was used for demonstrations of the SAMOVA techniques. Internship done in SAMOVA team.

Junior Software Engineer, two months and a half, **CEICOM** **Toulouse**, 2011
Porting an inter-machine communication tool between applications from Windows to Linux systems. Results: porting done with strategic impact. It was an industrial internship.

Teaching

Machine Learning basis, substitute teacher, **University of Toulon** **Toulon**, 2018
I taught to Master students in Software Development. It represents 8h of practical class. I created the courses on simple tasks (mnist and bird sounds) using tensorflow framework and simple neural network approaches.

Basic Algorithmic, substitute teacher, **University of Toulon** **Toulon**, 2017–2018
I taught to Bachelor students in Engineering Sciences. It represents 8h of tutorial class. Proof of algorithms and sorting algorithms.

Graph Theory, substitute teacher, **University of Toulon** **Toulon**, 2017-2018
I taught to Bachelor students in Engineering Sciences. It represents 12h of tutorial class and 57h of practical class. I participated in the redaction of the tutorial and practical classes, it consisted in colored graph and finding the best path between edges.

Education

PhD, Computer Science, **Paul Sabatier University** **Toulouse**, in progress
I improved my communication during presentation and on the radio.

Master Degree, Artificial Intelligence, **Paul Sabatier University** **Toulouse**, 2013–2015
Statistical models, Signal Processing, Pattern Recognition, Robot control, and Management.

Bachelor Degree, Fondamental Computer Science, **Paul Sabatier University** **Toulouse**, 2013
Development tools, low-level programming, Statistics, Probabilistic and Calculus.

Academic and Technological Diploma, Computer Science, **IUT Paul Sabatier** **Toulouse**, 2011
Technical Computer Science skills and ways to design applications for the industry.

Hobbies

Sport and Health: Bodybuilding using elastics (3 times a week), running (2 times a week and practise of automassages to improve recovery and well-being.

Manga: I mostly read Japanese Shōnen (such as attack of the titans, dragon ball super, . . .).

Music: Australian hip-hop and rap (Hilltop Hoods, Briggs, ...).

Digital Drawing: Currently learning digital drawing using graphic tablet.