Tanguy Damart

Scientific Software Developer

✉ tanguy.damart@protonmail.com

Previous Employment & Education

- **Blue Brain Project, EPFL** — **Geneva**
  Scientific Software Developer — *2019–*

  As part of the Cells team, my responsibility was to develop tools used for electrophysiological data analysis and neuron model building. More specifically, I was in charge of the implementation of new optimisation methods for parameter tuning and of the development of workflows to automatize the creation of biologically detailed neuron models.

- **Mojo Diagnostics** — **Lyon**
  M.L. & Computer vision Engineer — *2017–2019*

  As a computer vision and machine learning engineer, I developed a program used as the core of a computer assisted sperm analysis system. This software detects and tracks sperm cells using machine learning techniques coupled with standard image analysis methods in order to provide fertility metrics and help doctors assess the fertility of their patients.

- **Institut Lumière Matière, Université Lyon 1** — **Lyon**
  PhD Student in computational physics — *2014–2017*

  PhD student under the supervision of Pr. David Rodney and Pr. Anne Tanguy in the Modelisation of Condensed Matter and Interfaces group of the Institut Lumière Matière. During my PhD, I performed numerical and theoretical studies of energy dissipation in disordered solids leading to three publications in academic journals.

- **Ecole Centrale de Lyon, INSA de Lyon, Université Lyon 1** — **Lyon**
  Nanoscale Engineering Master Student — *2012–2014*

  The International Nanoscale Engineering Master offered by three establishments in Lyon was entirely taught in english. The main focus of the program were material science and the engineering of the properties of solids at the nanoscale. My Master thesis, dedicated to the numerical study of attenuation in partially crystalline solids, lead to a publication in the journal Physical Review B.

- **Université Lyon 1 & Tohoku University** — **Lyon & Sendai**
  Physics Bachelor Student — *2009–2012*

  This three year long bachelor in physics, taught me the basics of physics from quantum physics to thermodynamics, numerical methods and more. I spent the first two years in the University of Lyon while for the last, I took part in the Junior Year Program in English (JYPE) proposed by the Tohoku University in Japan.

Skills

- **Programming languages:** Python, TeX, GNU/Linux OS, Tensorflow, Luigi, C
- **Specialized knowledge:** solid state physics, neurosciences, data analysis and visualization, multi objective optimization methods, machine learning and computer vision.

- **Languages:** French (native), English (fluent), Japanese (intermediate)

Selected Publications

- A. P. Buccino, T. Damart et al, *A multi-modal fitting approach to construct single-neuron models with patch-clamp and high-density microelectrode arrays*, To be published (2022).
- T. Damart et al, W. Van Geit, H. Markram, *Data driven building of realistic neuron model using IBEA and CMA evolution strategies*, Proceedings of the 2020 Genetic and Evolutionary Computation Conference Companion (2020).
- T. Damart and D. Rodney, *Atomistic study of two-level systems in amorphous silica*, Phys. Rev. B, 97, 014201 (2018).
- T. Damart, A. Tanguy and D. Rodney, *Theory of harmonic dissipation in disordered solids*, Phys. Rev. B, 95, 054203 (2017).

Activities and interests

- Board games and go player
- Avid trail runner and weightlifter
- Reinforcement learning and general intelligence
- Philosophy and literature

References

David Rodney
Institut Lumière Matière
Université Claude Bernard Lyon 1
Bâtiment Kastler, 10 rue Ada Byron
69622 Villeurbanne, France
✉ david.rodney@univ-lyon1.fr
☎ +33(0)472431473

Daniel Thomas
CTO at Mojo diagnostics
21 Av. Georges Pompidou
69003 Lyon, France
✉ daniel@mojodiagnostics.com
☎ +33(0)651570370