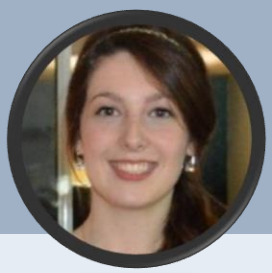

Ludivine Morvan

Research scientist in machine learning / imaging

PhD student in machine learning / medical image processing & Biomedical and Health Engineer.

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Nantes, France (Permis B)

https://ludivinemv.github.io/

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PROFESSIONAL EXPERIENCE

2018- End of 2021 (Nantes, France) — **CRCINA - INSERM / Ls2n - Ecole Centrale de Nantes**
PhD student / Teaching
- Collaboration with the nuclear medicine department of the hospital
- Processing of a multiple myeloma dataset (PET images and clinical)
- State of art and implementation of survival models (RSF, Deep Learning etc.) with R and python (Tensorflow / Keras)
- Teaching in image processing, machine learning, control, python (engineering school)

2015-2019 (Nantes, France) — **Anacours**
Private tutoring in mathematics

March-August 2018 (Nantes, France) — **Ls2n – Ecole Centrale de Nantes**
Research Internship
« Survival prediction by Random Survival Forest and PET imaging in the multiple myeloma context»

2016-2018 (Créteil, France) — **CHU Henri Mondor**
Research, innovation et development Project
« Improvement of an algorithm allowing patient-ventilator synchronisation »

May-August 2017 (Stockholm, Sweden) — **Vironova AB**
Imaging Internship
« Script creation to analyse elongated particles for improving the MiniTEM software »

July 2016 (Brest, France) — **CHRU of Brest, Morvan hospital**
Biomedical technician internship
« Study on the utilisation of the centrifuges and refrigerator parks».

April–August 2015 (Brest, France) — **CHRU of Brest, La Cavale Blanche hospital**
Bacteriological technician (internship+ summer job)
« Identification by molecular biology and mass spectrometer of the *Lactobacillus* on bronchi of CF patients non colonized by *Pseudomonas aeroginosa*». + Bacterial sowing operations

EDUCATION

2018- End of 2021 (Nantes, France) — **Ecole Centrale de Nantes**
PhD in information sciences, Imaging
« Computer-aided prognosis in the multiple myeloma context »

2015-2018 (Créteil / Champs-sur-Marne, France) — **ISBS engineering school – UPEC (ESIEE Paris)**
Specialising in biomedical and health engineering
Specialities Imaging/informatics and biomaterial/biomechanics
(First-class honours)

2013-2015 (Brest, France) — **IUT Brest**
DUT biological analysis

2012-2013 (Rennes, France) — **CPGE – Chateaubriand High school**
first year in BCPST – Biology, chemistry, physics, and earth sciences

PROGRAMMING

Python	■■■■■
Tensorflow/Keras	■■■■□
R	■■■■■
Matlab	■■■□□
C++, java, SQL	■■□□□
HTML/XML/CSS	■■■□□
Django	■■□□□
Latex	■■■■■

SOFTWARE

- Github / Gitlab, docker
- VS code, Spyder/Anaconda, Android Studio, Atome
- Slicer3D, ImageJ
- Excel, Orange, Ansys, Labview.

SKILLS

- Machine learning, Deep learning, data analysis etc.
- Image analysis, synthesis, and processing
- Optimisation, signal processing
- Basics and analytical techniques in medical biology and physics
- Biomechanics and biomaterial

LANGUAGES

French:	■■■■■
English:	■■■■□
Spanish:	■■■□□
Swedish:	■□□□□

LEISURE

- **Volunteer work** (in a shelter, academic support, food collection etc.)
- **Associations** (Alumni, ISPA, etc.)
- Personal **projects** (android application, websites, etc.)
- 2001- 2020: **Dance** (modern-jazz and street-jazz)
- **Travels**

Additional Information

Some recent personal projects

Still in progress

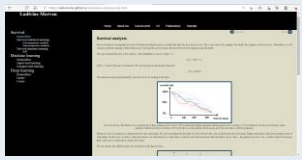
Application to learn a new language, Android Studio

Developing an Android application to help to learn a language (Swedish at the beginning), dictionary of learned words and tests on these words. Classification of the words by theme,
importance, degree of learning etc. Acquired knowledge: Android studio, Java, HTML, CSS, XML, SQLite

Still in progress

Personal website with tutorials

Designing a personal website containing pages with tutorials about different parts of what I learned during my thesis as Survival analysis, deep learning and other machine learning methods, imaging etc.
Acquired knowledge: HTML, CSS, XML (https://ludivinemv.github.io/)

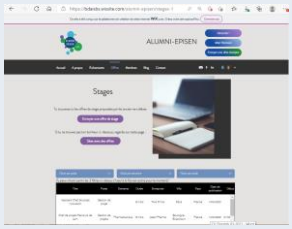


2020-Now

Alumni EPISEN – ISBS – IT manager

- (still in progress) Web site creation where students and former students can log in to enter information about their jobs and internship, find information about other members and discuss, blog, job offers etc. (https://bdaisbs.wixsite.com/alumni-episen)
- (February 2021) Organisation of the Former student's forum

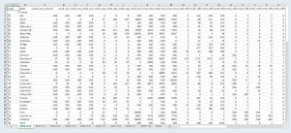
Acquired knowledge: website creation, events organisation



2020

COVID data extractor – Hospital of Poitiers

Collaboration with Poitier hospital to help them in Covid-19 data extraction from government websites to predict hospital saturation. Extraction with python on different website of statistical numbers by department and age: positive covid tests, reanimation rates, other disease data (Flu, diabetes, obesity, bronchitis etc.)
Acquired knowledge: Selenium package, Python



Publications

Peer Reviewed Journals

IJCARS, 2020

Morvan, L., Carlier, T., Jamet, B. et al. Leveraging RSF and PET images for prognosis of multiple myeloma at diagnosis. International Journal of Computer Assisted Radiology and Surgery (IJCARS), 15, 129–139 (2020). https://doi.org/10.1007/s11548-019-02015-y

EJNMMI, 2020

Jamet, B., **Morvan, L.**, Nanni, C. et al. Random survival forest to predict transplant-eligible newly diagnosed multiple myeloma outcome including FDG-PET radiomics: a combined analysis of two independent prospective European trials. European Journal of Nuclear Medicine and Molecular Imaging (2020). https://doi.org/10.1007/s00259-020-05049-6

Conference Proceedings

PRIME (MICCAI), 2020

Morvan L. et al. Learned Deep Radiomics for Survival Analysis with Attention. Predictive Intelligence in Medicine. PRIME 2020. Lecture Notes in Computer Science, vol 12329. Springer, Cham. (2020) https://doi.org/10.1007/978-3-030-59354-4_4

JFMN, 2019

Morvan, L., Carlier, T., Jamet, B. et al Prédiction de la progression chez des patients atteints de myélome multiple avec des Random Survival Forest. Médecine Nucléaire. Volume 43, Issue 2. Page 193 (2019) https://doi.org/10.1016/j.mednuc.2019.01.061