

Guilhem Marion | PhD Student in

Music Perception

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Education

ATIAM **Paris, France**

Institut de Recherche et de Coordination Acoustique/Musique (IRCAM) *2018–2019*

Computer Science : MIR, Machine Learning, Music Analysis, Real-Time.

Signal Processing : Signal Analysis, Transformation, Synthesis, Reconstruction and Denoising, Source Separation.

Acoustics : Acoustics of musical instruments, Modal Analysis, Vibration, Rooms Acoustics.

Coding practice in Python, C and Matlab.

Master's Degree in Computer Science **Lyon, France**

University Claude Bernard *2017–2018*

— Artificial Intelligence (from prolog to RNN), Signal Processing, Embedded Programming, Networks, Complexity, Operations Research, Graph Theory, Game Theory, Compilation, Computability, Cryptography, Web, NoSQL databases.

— Coding practice with Java, C++, Python, JS.

Preparing DEM Music Diploma **Lyon, France**

Music Conservatory *2016–2018*

Jazz guitar, and collective practice.

Electroacoustic Composition and Classical and Jazz harmony.

Master's Degree in Musicology **Lyon, France**

University Lyon Lumière *2016–2017*

— Achievement of a thesis about computer-aided methods for grammar modelization in a semiological approach to music.

— Courses in history, aesthetics, and sociology of music.

— Wrote of many essays for classes validation.

Bachelor's Degree in Theoretical Computer Science and Mathematics **Lyon, France**

École Normale Supérieure *2015–2016*

Mathematics Probability : sample space, conditional probability, independence, continuous random variables, concentration inequality, limit theorems, discrete Markov chains, statistics. Logic.

Programming in C, C++, Python, Bash, and assembler for several projects. Design of a processor, Oriented Object Programming, algorithms optimization and GPU programming.

Complementary courses in Film, Art History, Philosophy, and Linguistics.

Double Degree in Computer Science and Biology Ecology **Montpellier, France**

University of Montpellier, 2nd year of bachelor *2013–2015*

Computer Science Algorithms, databases, statistics, imperative programming, Oriented Object Programming. Coding practice in C++, Java, Python, Bash and, Oz.

Biology Concepts and methods for Ecology, mathematics and statistics applied to Biology, Evolution, Genetics, Plant and Animal Physiology. Coding practice in R.

Experiences

IRCAM Master's Thesis

Paris, France

ENS

February 2019 – July 2019

Reproduction of an ongoing study on EEG decoding of melodic expectations ;
Improvement of the statistical model of music used in the study ;
Design of a new experiment about melodic expectations and musical imagery.

Project with Frédéric Armetta

Lyon, France

LIRIS

November 2017 – August 2018

Bibliographic review about generative neural network and music generation.
Design of a neural network from a state-of-the-art knowledge that can produce jazz standards from the RealBook dataset with long-term dependencies, including melody and chords progression.
Work about memory in several musical grammar learning model leading to a paper to be submitted.

Internship in Ethnomusicology (for Musicology Master's degree)

Chişinău, Moldova

AIRM

Summer 2017

funded by région Rhône-Alpes

Autonomously collected elements from sacred musical heritage : recordings, library, interviews, field work.
Partnership work with the AIRM about the enhancement of the Moldovan cultural heritage.

Internship in Computer Science with Alexander Shen

Montpellier, France

LIRMM, Team Escape

Summer 2016

Theoretical considerations on random and pseudo-random numbers.
Bibliographic review on production and test of random sequences.
Design of a random number generator about cryptographic quality.

President of a Film Association

Lyon, France

Champ Libre ENS de Lyon

2015 – 2016

Management of projections, debates and inviting filmmakers.

Internship in Theoretical Computer Science with Sabrina Ouazzani

Montpellier, France

LIRMM, Team Escape

Summer 2015

Bibliographic review : Computability, Logic and Turing Machines.
Computer Music project about constraint modeling and machine learning.

Skills

Programming: PYTHON, C, C++, PYTORCH, NUMPY, R, Bash, JAVA, JAVASCRIPT

Desktop tools: L^AT_EX, Illustrator, Indesign, HTML5, CSS on Linux and MacOS

French: Fluent.

English: Good working language (at least B2 level).

Espagnol: Intermediate level (B1).

Art: Ableton Live, Pro Tools, MuseScore, Adobe Première Pro, Photoshop

Activities

Photography: Analog and digital photography. Exhibitions and publications for Art journals.

Art Video: Exhibition at Taipei Fine Arts Museum.