

# **ABOUT ME**

Doing research and development for DSP and Machine Learning. My main skills include Pure Math (Audio-) DSP, Machine Learning, Data Analysis, Electronics, Product Design & User Experience, Audio Production (Composition, Recording, Editing, Mixing, Mastering) and cooking.

## PROGRAMMING LANGUAGES

• C++

 $\rightarrow$  STD, Eigen, Boost, etc

• Python

 $\rightarrow$  Numpy/Scipy, Pandas, Scikitlearn,

Numba, MatPlotLib, (Pytorch), etc

- MAX MSP
- Java
- MATLAB
- LaTeX

# **SPOKEN LANGUAGES**

- French (Native)
- German (C1 level)
- English (C1 level)
- Luxembourgish (Native),
- Greek (Native).

# PORTFOLIO

https://stephane.thunus.org



# **STÉPHANE THUNUS**

# MATHEMATICS FOR MACHINE LEARNING AND DIGITAL SIGNAL PROCESSING

# EXPERIENCE

#### u-he: MATHEMATICIAN FOR ML/DSP RESEARCH (2021-NOW)

Research in Digital Signal Processing/Machine Learning Algorithms for sound with focus on Psycho-acoustics in Python/C++.

#### MACHINE LEARNING RESEARCH (2021-NOW)

My current research and soon to be published papers and contributions to linear algebra frameworks can be seen in <u>my Portfolio</u>.

#### SOUND ENGINEERING (2015-NOW)

• <u>Music</u>: Recorded, edited, mixed, mastered and produced tracks for several bands and artists of different genres. For examples <u>see Portfolio</u>.

• Film: Boom operation on movie sets, Sound-track for two animation films at SAE, de-noising and audio cleaning for an independent movie.

#### ABLETON CONTROLLER DESIGN (2017)

My Bachelor Thesis was the conception and design of controllers for Ableton Live. In this context I researched and took courses in product design, user experience, general usability and human-machine interaction. For the unit's demonstration <u>see Portfolio</u>.

#### **INTERNSHIPS**

- Live sound engineering in a theater (Luxembourg, 2015)
- Studio Production & MIDI instruments (Luxembourg, 2015)
- Electric Guitar woodwork (Greece, 2016) (see Portfolio)

### **EDUCATION**

#### TECHNISCHE UNIVERSITÄT BERLIN (2017 - 2022)

MSc in Audio DSP and ML (Audio Communication & Technology) In parallel to practically an entire Math Bachelor to support the Master. My Thesis proposes new algorithms in the NARMAX framework, soon to be submitted to IEEE for peer review and publication. Grade: 100%

#### SAE INSTITUTE GLASGOW (2015 - 2017)

BSc (Hons) in Audio Production. Grade: 97.5%

#### PRIVATE LESSONS IN SOUND STUDIO (2012 - 2015)

First intensive contact with sound engineering: 3 years in a studio getting lessons from the main engineer at a rate of 4 hours every second week. The lessons were about mixing, mastering and synthesis.

#### PRIVATE LESSONS IN MUSIC THEORY (2008 - 2015)

Music theory paired with guitar lessons and focused on analysis of patterns and composition styles of many different modern music genres, ranging from Flamenco and Jazz to Metal and Deathcore. The lessons lasted 7 years and were at a rate of one weekly hour.

#### HIGHER SECONDARY CYCLE (2012 - 2015)

Higher education in "Mathematical And Economical Sciences". Grade: 77%.