Grégoire **Locqueville**

Software Engineer

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Experience

Full-Stack Software Engineer **Jul. 2024 — Present**

CNRS, Institut des Systèmes Complexes *Paris, France*

- Development (**Haskell, Typescript, React**) of a collaborative web workspace with facilities for knowledge mapping
- Integration (**WASM**) of **theoretical mathematical algorithms** into a web application

Research Engineer **Jan. 2023 — Dec. 2023**

Sorbonne Université *Paris, France*

- Led the **transition** from prototype software into a finished digital music instrument, its **documentation** and its **distribution**: http://chorus-digitalis.lam.jussieu.fr/voks.html
- Conception and implementation of a **scientific protocol** to validate the instrument; subject recruitment and direction; result **qualitative** and **quantitative** analysis.

Ph.D. Researcher **Dec. 2018 — Jun. 2022**

Sorbonne Université *Paris, France*

- **Conception**, **implementation** and **use** of the Voks music instrument.
- Research communication both in the **traditional form** of research articles and **international conference** presentations (*NIME 2019, Porto Alegre, Brazil*; *CMMR 2023, Tokyo, Japan*), and through **music performances** and participation to the prestigious *Guthman contest, Atlanta, U.S.A* (2nd prize).
- Intern supervision.

Teaching Assistant **2019 – 2021**

Sorbonne Université *Paris, France*

- **Teaching**; pivotal role in **faciliation of instructional activities** while navigating the challenges posed by the COVIDr-19 pandemic.
- Courses taught : **Discrete Mathematics**, **Algorithmics**.

Education

Ph.D., *Sorbonne Université, Paris, France* **2022**

ATIAM Masters, *Sorbonne Université, Paris, France* **2018**

- **Acoustics, Signal Processing, Computer Science** applied to **Music**
- Student project: Development of a **physics-based**, **real-time**, high-quality clarinet synthesizer: https://www.youtube.com/watch?v=kJTrg8ovfIk

Master of Science, *Centrale Paris, Châtenay-Malabry, France* **2017**

Major in **Computer Science**

Preparatory Classes, *Collège Stanislas, Paris, France* **2013**

2-year intensive preparation for the highly selective French Grandes Écoles. Major: **Mathematics** and **Physics**; Option: **Computer Science**.

High School Diploma, *Saint-Louis de Gonzague, Paris, France* **2011**

Major in **science**; with **highest honors**.

Skills

Languages

- **French** : Native
- **English** : Fluent (C1)
- **German** : Basic proficiency

Programming Languages and Technologies

- Haskell, Rust, Typescript, Python, C, C++ — WebAssembly
- Front-end and back-end development
- Audio and graphics programming

Personal Projects

Musical Live-Coding Tool

Amati *(C++, Real-time Audio)*: Free, open source audio plugin for live-coding in Faust, for musical performance and production: https://codeberg.org/glocq/Amati

Musical Performance Tool

Galatea *(Purescript)*: A free, open source web application that turns any pointer-like device (mouse, graphic tablet…) into a **MIDI controller**: https://codeberge.org/glocq/Galatea

Sound Processing Library

Hworld *(Haskell, C FFI)*: Haskell bindings to the World voice processing library: https://codeberg.org/glocq/hworld

Procedural Generation

Escherscape *(Haskell, 3D Graphics)*: A free, open source demo of declarative procedural generation in an FPS-like setting: https://codeberg.org/glocq/escherscape

Game Development

Fernweh *(Rust, Bevy)*: A small helper library for procedural generation in the Bevy game engine: https://codeberg.org/glocq/fernweh/