

Alexis Breust

Applied mathematics and Computer Science Engineer

2 avenue des Tirignons
38570 Goncelin FRANCE
☎ +33 6 98 29 70 55
✉ alexis@breust.fr
🌐 www.alexis.breust.fr
31 y.o. – Driver's license

Personnal projects

2017-... **3D real-time renderer engine**, *lava*

The motivation is simple: understand how behave and are structured game engines such as Unity or Unreal Engine. This project was initially a way, for me, to learn Vulkan and experiment with new rendering techniques. I now use it as a toy to craft a virtual reality video game and a chess application.

Technologies: C++/JAI, VULKAN, OPENXR

Website: [HTTPS://GITHUB.COM/BREUSH/LAVA-JAI](https://github.com/BREUSH/LAVA-JAI)

Professional experience

2019-... **Software engineer**, *The Mathworks*, Grenoble

Working on static analysis tools for C/C++ (Polyspace), detecting defects in code without running it, mainly through abstract interpretation. I also lead the development for some IDE plugins to integrate these tools. I was working with international teams.

Technologies: C++, C#

2018–2019 **Research engineer**, *Lab. Jean Kuntzmann*, Grenoble

Within a cryptography team, I was optimizing open-source libraries (LinBox, fflas-ffpack, givaro) using parallelization on existing algorithms. I have also implemented the multi-modular Dixon lifting algorithm based on papers while thinking about improving it. These libraries are used within SageMath.

Technologies: C++, OPENMP, MPI, SIMD

2016–2018 **Developer-lead WebGL**, *Wanadev*, Lyon

With the Kazaplan team, developing an visual 2D/3D web editor for houses, I learned the web technologies (JS, WebGL). I was both developing the front-end (UI, UX and rendering) and the back-end (import and optimization of 3D models). The job also consisted in testing and proposing ideas for virtual reality games.

Technologies: JS, WEBGL, ASSIMP, GLTF, UNITY, UNREAL

Formation

2014 **Master's degree (engineer)**, *Ensimag*, Grenoble

Domains: ALGORITHMIC, 3D, CRYPTOGRAPHY

2013 **Abroad studying**, *Tomsk Polytechnical University*, Russia

Technologies: C++, OPENMP, OPEN MPI, CUDA, BLENDER

Languages and hobbies

French Native language

English Fluent written and spoken, professional

TOEIC 2012

Games Board and card games such as CHESS, BRIDGE, CLANK.

Improv CO-FONDER of a theatrical improvisation association and ANIMATOR for teens and adults.