

Alexandre Binninger



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Motivation Passionate about Computer Graphics and Generative Artificial Intelligence.

📖 Education

- **ETH Zürich** Zürich
PhD in Computer Science 2021 – Now
 - ▶ Research interest: shape modeling and shape generation.
 - ▶ Advised by Prof. Dr. Olga Sorkine-Hornung at IGL (*Interactive Geometry Lab*).
- **ETH Zürich** Zürich
M.Sc. in Computer Science 2019 – 2021
 - ▶ Focused on Visual Computing-related courses including *Shape Modeling and Geometry Processing*, *Computer Graphics* and *Physically-Based Simulation*.
 - ▶ Master Thesis: *Approximation of 3D Shapes by Developable Surfaces via Tangent Space Thinning*.
- **École Polytechnique** Palaiseau
Master of Engineering, Science and Technology 2016 – 2019
 - ▶ Algorithms and foundations of programming languages track.
 - ▶ Computer Science courses include: *Algorithm Design and Analysis*, *Randomization*, *Cryptography*, *Information Theory*.
 - ▶ Mathematics courses include: *Randomness*, *Numerical Approximation and Optimization*, *Functional Analysis*.
- **Université Paris-Nanterre** Paris
Bachelor of Philosophy 2017 – 2018
 - ▶ Distance learning alongside scientific studies. Awarded with honors.
 - ▶ Courses include: *Logic*, *Philosophy of Science*, *Metaphysics: Experience by Kant and Hegel*.
- **Lycée Louis-Le-Grand** Paris
Preparatory program 2014 - 2016
 - ▶ A two-year post secondary intensive coursework leading to competitive entrance examinations to the *Grandes Écoles*. Main subjects: Mathematics and Physics.

📄 List of publications

- **Smooth Interpolating Curves with Local Control and Monotone Alternating Curvature** July 2022
In Computer Graphics Forum (proceedings of SGP) 2022
Alexandre Binninger, Olga Sorkine-Hornung
- **Developable Approximation via Gauss Image Thinning** July 2021
In Computer Graphics Forum (proceedings of SGP) 2021
Alexandre Binninger, Floor Verhoeven, Philipp Herholz, Olga Sorkine-Hornung

Research Work

- **Master Thesis – Shape Modeling** Zürich
Interactive Geometry Lab - ETH Zürich *Sept. 2020 - April 2021*
 - ▶ Subject: *Approximation of 3D Shapes by Developable Surfaces via Tangent Space Thinning*
 - ▶ Devising a method based on differential geometry properties. Implementation in C++ with libigl.
 - ▶ Supervised by Prof. Dr. Olga Sorkine-Hornung.
- **Research Internship – Program Verification** Zürich
Programming Methodology Group - ETH Zürich *April 2019 - August 2019*
 - ▶ Subject: *Completeness, Termination and Efficiency for e-matching-based Axiomatisations.*
 - ▶ Study of the Completeness and Termination of the sequence theory by varying the triggers.
 - ▶ Supervised by Dr. Alexander J. Summers.
- **Team Research Project** Palaiseau
Live theater subtitling Project *Jun. 2017 - Jul.2018*
 - ▶ Displayed subtitles in real time on smart glasses or a smartphone with a web interface.
 - ▶ Designed the algorithm matching the actors' spoken text with their written text.
 - ▶ Winners of the Vivatech Competition. Project presented at the international Microsoft Imagine Cup.

Work Experience

- **Meta** Zürich
Research scientist internship *Mai. 2023 - Aug. 2023*
 - ▶ Integrated the Gemini research group.
 - ▶ Worked on a research project about shape generation conditioned on prior information.
- **Muvee Technologies** Singapore
Software engineering internship *Jun. 2018 - Aug. 2018*
 - ▶ Integrated a development team working on an automatic photobook-maker application.
 - ▶ Implemented an Auto-Titler using date, time, and AI Scene Classification, devised an algorithm to map a social network from individuals in a photo set.
- **Gendarmerie Nationale** Colmar
Leadership training as Cadet Officer *Sept. 2016 - Mar. 2017*
 - ▶ École Polytechnique's first-year military service. Optimized duty hours across police units.

Skills

- **IT-related skills**
 - ▶ **Programming languages:** Python (★★★★), C++ (★★★★), Java (★★), Matlab (★★), Javascript (★), OCaml (★), SQL (★), Lua (★), Rust (★).
 - ▶ **Others:** \LaTeX (★★★★), Git(★★), Unix(★★), HTML/CSS (★★), Blender (★★), Inkscape (★).
- **Languages:** French (native), English (proficient), German (intermediate), Mandarin Chinese (intermediate).

Outside Activities

- **Discord community - Developer and Leader** Zürich
E-sport Community *Sept. 2019 - February 2021*
 - ▶ Created, developed and managed a Discord server reaching 1'000 members. Tournament Organizer.
 - ▶ Designed and implemented a Discord bot hosted on a remote VPS featuring a ranking system, a match wizard, an automated competitive event manager and a profile card generator with gamified features.
 - ▶ Implementation with discord.py, Python Imaging Library (PIL) and MySQL.
- **Computer service system student association** Palaiseau
Computer Technology association at École polytechnique *Nov. 2017 - Oct. 2018*
 - ▶ Deployed a web service for equipment pool among students on the campus.
 - ▶ Integrated the Sysadmin team. Provided support for students' computer-related problems.