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, shape and image generation, geometric artificial intelligence.
- ▸ 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, Cryptology, 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

SD-πXL: Generating Low-Resolution Quantized Imagery via Score Distillation
SIGGRAPH Asia 2024, Technical Papers *December 2024*
Alexandre Binninger and Olga Sorkine-Hornung

SENS: Part-Aware Sketch-based Implicit Neural Shape Modeling
EUROGRAPHICS 2024 *April 2024*
Alexandre Binninger, Amir Hertz, Olga Sorkine-Hornung, Daniel Cohen-Or, Raja Giryes

Smooth Interpolating Curves with Local Control and Monotone Alternating Curvature
In Computer Graphics Forum (proceedings of SGP) 2022 *July 2022*
Alexandre Binninger and Olga Sorkine-Hornung

- **Developable Approximation via Gauss Image Thinning**
In Computer Graphics Forum (proceedings of SGP) 2021   *July 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.
  ▶ Lead to a publication at SGP 2021.
  ▶ 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++ (★★⯪), Javascript (★★), Rust (★⯪).
  ▶ **Others:** LaTeX(★★★), Git(★★), Unix(★★), HTML/CSS (★★), Blender (★⯪), Inkscape (★).

- **Languages:** French (native), English (proficient), German (intermediate), Mandarin Chinese (intermediate).

⬈ Outside Activities

Talent Kick — Switzerland
Start-up incubator — *Feb. 2024 - current*
- ▸ Incorporated the TK-S24 batch, an incubator dedicated to students enrolled in Swiss Universities.
- ▸ Co-founded Dimoverse, a start-up that aims at providing 3D technologies to improve e-commerce.
- ▸ Pitched at venture pitching event and in front of TK strategy board.

VMI board member — Zürich
ETH D-INFK scientific staff association — *Sep. 2023 - Feb. 2025*
- ▸ VMI represents, supports and connects the scientific staff of the computer science department of ETH.
- ▸ Organized career-focused events with a focus on academic excellence in the form of panel discussions featuring participants with a doctoral degree.
- ▸ Co-president between Oct. 2024 and Feb. 2025.

Discord community - Developer and Leader — Zürich
E-sport Community — *Sep. 2019 - Feb. 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.