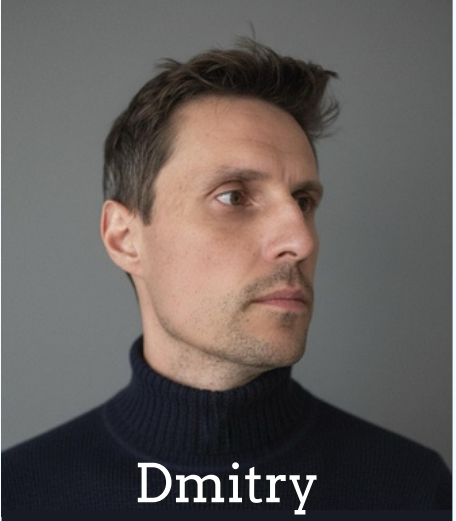

Dmitry ANISIMOV

SENIOR 3D GEOMETRY
C++ ENGINEER
PhD

Computational Geometry
Point Clouds · LiDAR
Large-Scale Processing
3D Algorithms · 3D AI

Paris, France · **Authorized to work in France / EU**

English C1 · **French** B2
Italian B1

CGAL Contributor

Google Summer of Code Mentor (2018 · 2019 · 2021)

10+ Years Experience
2+ Years Tech Leadership
Academia · Industry · Open Source · Startups · BigTech
Publications

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PROFILE

Senior C++ / 3D Geometry Engineer with 10+ years of experience building large-scale 3D and geometry-processing systems, from research and algorithms to production. MSc in Applied Mathematics and PhD in Informatics, with expertise spanning computational geometry, large-scale point-cloud processing, LiDAR, mesh processing, shape reconstruction, shape simplification, geometry kernels, and 3D AI. Experienced across research, open source, startups, and large-scale technology products.

CORE EXPERTISE

C++ Algorithms: modern C++, 3D algorithms & spatial data structures, computational geometry, large-scale geometry processing, performance optimization, software architecture, parallel computing, numerics

3D Geometry: point clouds, LiDAR, mesh reconstruction, mesh processing and simplification, LODs, geometry kernels, semantic segmentation, classification, object detection, Gaussian splats, 3D AI

Tech Leadership: architecture ownership, technical roadmap, code reviews, mentorship, hiring and interviewing, team development, requirements definition, prioritization, R&D strategy, research-to-production

WORK EXPERIENCE

SAMP (acquired by AIZE) — 3D Geometry Lead

France · 2022–Present

- developed C++ in-house back-end large-scale point-cloud processing algorithms for areas up to tens of billion points each
- worked on semantic classification, segmentation, and object detection using geometry processing approaches
- worked on pre-processing, post-processing and various tooling required for 3D AI point-cloud processing and algorithms
- developed and maintained a backend geometry kernel supporting production 3D processing pipelines with min external dependencies (primitives, algorithms, data structures, etc.)
- turned point clouds into meshes, CAD models and supported the corresponding formats (IFC, STP, etc.)
- was in charge of the team of geometry engineers providing them with the technical support, roadmap, design guidelines and helping them to deliver various production features

ZENLY (owned by SNAP INC) — Senior 3D Geometry Engineer

France · 2021–2022

- developed large-scale geometry-processing algorithms for interactive 3D world maps (mesh processing with LODs, tiling)
- worked on procedural 3D model generation (buildings, bridges, road networks, terrain, and rivers), simulation (car traffic) and geometry-kernel infrastructure using in-house and external dependencies
- optimized all real-time geometry algorithms in our 3D engine to have min latency for all, including old versions, mobile devices

GEOMETRYFACTORY (owns CGAL) — 3D R&D Engineer

France · 2019–2021

- developed production-quality C++ computational-geometry algorithms and software for commercial geometry applications

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- contributed multiple packages to the Computational Geometry Algorithms Library (CGAL), including Shape Detection, Shape Regularization, Generalized Barycentric Coordinates (2D and 3D) and Weight Interface
- worked on mesh simplification, surface reconstruction and multi-scale geometry / LOD generation
- collaborated with researchers and engineers to turn geometric algorithms into robust, reusable open-source software

INRIA (team **TITANE**) — 3D R&D Engineer

France · 2017–2019

- developed a fully automatic large-scale 3D urban reconstruction pipeline from LiDAR point clouds
- designed algorithms for 3D reconstruction and multi-scale level-of-detail (LOD) generation
- worked at the intersection of computational geometry, point-cloud processing and large-scale spatial data
- contributed to CGAL (open source Computational Geometry Algorithms Library)

EDUCATION

USI (Università della Svizzera italiana) — PhD in Informatics

Switerland · 2012–2017

Thesis: generalized barycentric coordinates and their applications to geometry processing

Supervisor: Kai Hormann

SPBU (Saint Petersburg State University) — MSc in Applied Mathematics

Russia · 2005–2010

Diploma: solving NP-complete problems by means of DNA properties with applications to DNA computers

Supervisor: Igor. L. Bratchikov

SELECTED PUBLICATIONS

- **Generalized Barycentric Coordinates in Computer Graphics and Computational Mechanics**, 2018 — book chapter, Editors: K. Hormann and N. Sukumar
- **Behaviour of Exponential Three-Point Coordinates at the Vertices of Convex Polygons**, Journal of Computational and Applied Mathematics, 2019, with K. Hormann and T. Schneider
- **Blended Barycentric Coordinates**, Computer Aided Geometric Design, 2017, with D. Panozzo and K. Hormann
- **Subdividing Barycentric Coordinates**, Computer Aided Geometric Design, 2016, with C. Deng and K. Hormann