

APPOINTMENTS

Postdoctoral Researcher , University of Tokyo <i>Department of Computer Science, IGARASHI Laboratory</i>	Sep '25 to Current Tokyo, JP
Postdoctoral Researcher , Swiss Federal Institute of Technology Lausanne (EPFL) <i>Department of Computer Science, Geometric Computing Laboratory (GCM)</i>	Feb '25 to May '25 Lausanne, CH

EDUCATION

Swiss Federal Institute of Technology Lausanne (EPFL) <i>Ph.D in Computer Science – Major in Artificial Intelligence (GPA: 5.4/6.0)</i> <ul style="list-style-type: none"> Relevant courses: Learning Theory, Optimization for Machine Learning, Information Theory, Distributed Information Systems 	Sep '19 to Jan '25 Lausanne, CH
University of California Berkeley <i>Master of Science in Mechanical Engineering – Major in Fluids (GPA: 4.0/4.0)</i> <ul style="list-style-type: none"> Relevant courses: Machine Learning, Optimization Methods, Tensor Calculus, Differential Geometry, Advanced Fluid Mechanics, Ocean Engineering 	Aug '17 to Dec '18 Berkeley, CA
Institut Supérieur de l'Aéronautique et de l'Espace, Supaéro (ISAE Supaéro) <i>Equiv. Bachelor of Science and Master of Science in Aeronautical and Aerospace Engineering ("Ingénieur ISAE Supaéro", GPA: 4.0/4.0)</i> <ul style="list-style-type: none"> Relevant courses: Advanced Probability and Statistics, Computer Science, Continuum Mechanics, Fluid Mechanics 	Aug '15 to Sep '19 Toulouse, FR

RESEARCH EXPERIENCE

Google Research (Arkadia) <i>Research Intern (qbecker@) – Host: Dr. Urs Bergmann (ursbergmann@)</i> <ul style="list-style-type: none"> Developed a differentiable geometric primitives composition module (JAX) Programmed deep vision models (JAX, TF1, and TF2) that learn to decompose an occupancy mask into primitives Implemented optimal transport-based losses to train models to simplify building footprints into primitives (JAX) 	Jun '22 to Sep '22 Berlin, DE
EPFL <i>Ph.D Candidate – Advisor: Prof. Dr. Mark Pauly</i> <ul style="list-style-type: none"> Introduced and implemented a rationalization algorithm for bending-active structures that optimizes a single kit of parts to approximate many user-defined designs Implemented an inverse design pipeline for deployable assemblies of curved elastic beams (C++ with Python bindings) Developed a forward design tool based on conformal map for C-shells (Rhino-Grasshopper plugin) Designed generative models to solve constrained physics-based inverse problems Developed differentiable physics simulation frameworks: billiard game with diverse obstacles (PyTorch), constrained elastic deformations of 3D volumetric objects (C++, PyTorch, and JAX) 	Sep '19 to Jan '25 Lausanne, CH
Dassault Systèmes <i>Research Intern in Machine Learning</i> <ul style="list-style-type: none"> Developed a clustering algorithm based on hash tables to find geometrically similar 3D parts within a dataset 	Jan '19 to Jul '19 Paris, FR
UC Berkeley <i>Graduate Student – Advisor: Prof. Dr. Reza Alam</i> <ul style="list-style-type: none"> Developed an ad hoc genetic algorithm coupled with a boundary element method to optimize underwater vehicles Trained a deep neural network to morph an underwater vehicle's shape according to its environment 	Sep '17 to Dec '18 Berkeley, CA
ISAE Supaéro <i>Undergraduate Student – Advisor: Prof. Dr. Laurent Joly</i> <ul style="list-style-type: none"> Coded the method of characteristics for supersonic flows to design nozzles (then validated with CFD) 	Jan '17 to Jul '17 Toulouse, FR

PUBLICATIONS

Quentin Becker*, Oliver Gross*, Mark Pauly (*joint first authors). Inverse Geometric Locomotion. *ACM Transactions on Graphics (Proc. of SIGGRAPH 2025)*, 44.4, article 141 (August 2025): 1-17.

Michele Vidulis*, Klara Mundilova*, **Quentin Becker***, Florin Isvoranu, Mark Pauly (*joint first authors). C-Tubes: Design and Optimization of Tubular Structures Composed of Developable Strips. *ACM Transactions on Graphics (Proc. of SIGGRAPH 2025)*, 44.4, article 154 (August 2025): 1-19 (**Best Paper Award Honorable Mention**)

Quentin Becker*, Uday Kusupati*, Seiichi Suzuki, Mark Pauly (*joint first authors). Computational Design of a Kit of Parts for Bending-Active Structures. *ACM Transactions on Graphics (Proc. of SIGGRAPH Asia 2024)*, 43.6, article 230 (December 2024): 1-16.

Quentin Becker, Seiichi Suzuki, Mark Pauly. Interactive Design of C-shells Using Reduced Parametric Families. *Journal of the International Association for Shell and Spatial Structures*, Vol. 65 (2024) No. 2 June n. 220.

Quentin Becker, Seiichi Suzuki, Yingying Ren, Davide Pellis, Julian Panetta, Mark Pauly. C-shells: Deployable Gridshells with Curved Beams. *ACM Transactions on Graphics (Proc. of SIGGRAPH Asia 2024)*, 42.6, article 181 (December 2023): 1-17 (**Best Paper Award Honorable Mention**)

Michelis, Mike Yan, and **Quentin Becker**. On Linear Interpolation in the Latent Space of Deep Generative Models. *ICLR 2021 Workshop on Geometrical and Topological Representation Learning*. 2021. (**Spotlight**)

Quentin Becker, Mohammad-Reza Alam, and Alexandre Immas. Hydrodynamic Design of a Morphic Autonomous Underwater Vehicle Using Neural Networks. *ASME 2019 38th International Conference on Ocean, Offshore and Arctic Engineering*. American Society of Mechanical Engineers Digital Collection. 2019.

INVITED TALKS

NVIDIA Toronto AI Lab, “Geometry-Informed Inverse Design of Physical Systems”, hosted by Prof. David Levin

February 2025

TEACHING EXPERIENCE

EPFL

Teaching Assistant for CS-457 Geometric Computing

- Developed recitations, created theory and coding homework (FEM, autodiff, adjoint sensitivity analysis)

Co-Head Teaching Assistant for CS-341 Introduction to Computer Graphics

- Created coding homeworks (raytracing on the GPU), developed and led recitations, supervised coding projects

Teaching Assistant for Math-101 Analysis I and II

Teaching Assistant for CS-107 Introduction to Programming

UC Berkeley

Graduate Student Instructor (50%) for Physics-8A Introductory Physics

Lausanne, CH

Fall 2021, 2023

Spring 2019, 2020

Fall 2020, Spring 2021

Fall 2022, 2024

Berkeley, CA

Fall, Spring 2017

MENTORSHIP

Master Thesis

- Orfeas Liossatos (MS student, EPFL); Topic: Inverse Geometric Locomotion

Semester Projects

- Mathilde Simoni (MS student, EPFL); Topic: Neural Subspaces for Symplectic Physical Trajectories
- Danila Zubko (MS student, EPFL); Topic: Latent Space Physical Simulations
- Vishal Pani (MS student, EPFL); Topic: Generative Model Evaluation Metric Using Differential Geometry
- Cosme Jordan (MS student, EPFL); Topic: Generative Inverse Design of Kirigami Sheets
- Amine Chaouchi (MS student, EPFL); Topic: Unsupervised Disentanglement of Caricatures Generation
- Mike Jan Michelis (MS student, TUM); Topic: Interpolations in a Generative Model’s Latent Space
- Nathan Greslin (MS student, EPFL); Topic: Body Capture from a Single Image

Summer Interns

- Janet Qian (BS student, MIT); Topic: Topological Inverse Design of Elastic Springs
- Jae Yoon (David) Cha (BS student, University of Waterloo); Topic: Elastic Single Axis Joints Simulation
- Han Ying (BS student, CMU); Topic: Interactive Surface Parameterization

Spring 2025

Spring 2024

Fall 2023

Spring 2022

Fall 2021

Spring 2020

Fall 2020

Fall 2020

Summer 2024

Summer 2023

Summer 2021

PROFESSIONAL SERVICE

Reviewing

SIGGRAPH

SIGGRAPH Asia

AWARDS/HONORS

- Merit Scholarship, Fondation ISAE SUPAERO

May ’17

IT SKILLS

Programming: Python (JAX, PyTorch, TF), C++, WebGL, Matlab

Others: \LaTeX , Git, Google Internal Coding Infrastructure, Rhino-Grasshopper, Catia, StarCCM+, Fluent

VOLUNTEER EXPERIENCE

- **SUPAERO Junior Conseil – the Junior Entreprise of ISAE SUPAERO**, Head of the event division
- **SUPAERO Fencing Club**, President of the association
- **SUPAERO Student Association**, Section treasurer
- **Ose L'ISAE**, Volunteer in the social outreach section of ISAE SUPAERO

NON-RESEARCH WORK EXPERIENCE

Airbus Saint Eloi

Intern (laser measurements on engine pylons)

Jun '16 to Jul '16
Toulouse, FR