

APPOINTMENTS

**Postdoctoral Researcher**, Swiss Federal Institute of Technology Lausanne (EPFL) Feb '25 to current  
*Department of Computer Science* Lausanne, CH

EDUCATION

**Swiss Federal Institute of Technology Lausanne (EPFL)** Sep '19 to Jan '25  
*Ph.D in Computer Science – Major in Artificial Intelligence (GPA: 5.4/6.0)* Lausanne, CH

- Relevant courses: Learning Theory, Optimization for Machine Learning, Information Theory, Distributed Information Systems

**University of California Berkeley** Aug '17 to Dec '18  
*Master of Science in Mechanical Engineering – Major in Fluids (GPA: 4.0/4.0)* Berkeley, CA

- Relevant courses: Machine Learning, Optimization Methods, Tensor Calculus, Differential Geometry, Advanced Fluid Mechanics, Ocean Engineering

**Institut Supérieur de l'Aéronautique et de l'Espace, Supaéro (ISAE Supaéro)** Aug '15 to Sep '19  
*Equiv. Bachelor of Science and Master of Science in Aeronautical and Aerospace Engineering ("Ingénieur ISAE Supaéro", GPA: 4.0/4.0)* Toulouse, FR

- Relevant courses: Advanced Probability and Statistics, Computer Science, Continuum Mechanics, Fluid Mechanics

RESEARCH EXPERIENCE

**Google Research (Arkadia)** Jun '22 to Sep '22  
*Research Intern (qbecker@) – Host: Dr. Urs Bergmann (ursbergmann@)* Berlin, DE

- 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)

**EPFL** Sep '19 to Jan '25  
*Ph.D Candidate – Advisor: Prof. Dr. Mark Pauly* Lausanne, CH

- 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)

**Dassault Systèmes** Jan '19 to Jul '19  
*Research Intern in Machine Learning* Paris, FR

- Developed a clustering algorithm based on hash tables to find geometrically similar 3D parts within a dataset

**UC Berkeley** Sep '17 to Dec '18  
*Graduate Student – Advisor: Prof. Dr. Reza Alam* Berkeley, CA

- 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

**ISAE Supaéro** Jan '17 to Jul '17  
*Undergraduate Student – Advisor: Prof. Dr. Laurent Joly* Toulouse, FR

- Coded the method of characteristics for supersonic flows to design nozzles (then validated with CFD)

PUBLICATIONS

**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**)

INVITED TALKS

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

February 2025

TEACHING EXPERIENCE

<b>EPFL</b>	Lausanne, CH
<i>Teaching Assistant for CS-457 Geometric Computing</i>	Fall 2021, 2023
• Developed recitations, created theory and coding homework (FEM, autodiff, adjoint sensitivity analysis)	
<i>Co-Head Teaching Assistant for CS-341 Introduction to Computer Graphics</i>	Spring 2019, 2020
• Created coding homeworks (raytracing on the GPU), developed and led recitations, supervised coding projects	
<i>Teaching Assistant for Math-101 Analysis I and II</i>	Fall 2020, Spring 2021
<i>Teaching Assistant for CS-107 Introduction to Programming</i>	Fall 2022, 2024
<b>UC Berkeley</b>	Berkeley, CA
<i>Graduate Student Instructor (50%) for Physics-8A Introductory Physics</i>	Fall, Spring 2017

MENTORSHIP

<b>Master Thesis</b>	
• Orfeas Liassoutos (MS student, EPFL); Topic: Cooperative Geometric Locomoters	Spring 2025
<b>Semester Projects</b>	
• Mathilde Simoni (MS student, EPFL); Topic: Neural Subspaces for Symplectic Physical Trajectories	Spring 2024
• Danila Zubko (MS student, EPFL); Topic: Latent Space Physical Simulations	Fall 2023
• Vishal Pani (MS student, EPFL); Topic: Generative Model Evaluation Metric Using Differential Geometry	Spring 2022
• Cosme Jordan (MS student, EPFL); Topic: Generative Inverse Design of Kirigami Sheets	Fall 2021
• Amine Chaouchi (MS student, EPFL); Topic: Unsupervized Disentanglement of Caricatures Generation	Spring 2020
• Mike Jan Michelis (MS student, TUM); Topic: Interpolations in a Generative Model’s Latent Space	Fall 2020
• Nathan Greslin (MS student, EPFL); Topic: Body Capture from a Single Image	Fall 2020
<b>Summer Interns</b>	
• Janet Qian (BS student, MIT); Topic: Topological Inverse Design of Elastic Springs	Summer 2024
• Jae Yoon (David) Cha (BS student, University of Waterloo); Topic: Elastic Single Axis Joints Simulation	Summer 2023
• Han Ying (BS student, CMU); Topic: Interactive Surface Parameterization	Summer 2021

PROFESSIONAL SERVICE

Reviewing  
SIGGRAPH

AWARDS/HONORS	IT SKILLS
• <b>Merit Scholarship</b> , Fondation ISAE SUPAERO	May ’17 <b>Programming:</b> Python (JAX, PyTorch, TF), C++, WebGL, Matlab
• <b>Membership</b> , Golden Key (GKIHS)	Feb ’18 <b>Others:</b> L <sup>A</sup> T <sub>E</sub> X, Git, Google Internal Coding Infrastructure, Rhino-Grasshopper, Catia, StarCCM+, Fluent

VOLUNTEER EXPERIENCE

- **SUPAERO Junior Conseil – the Junior Enterprise 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

<b>Airbus Saint Eloi</b>	Jun ’16 to Jul ’16
<i>Intern (laser measurements on engine pylons)</i>	Toulouse, FR