

Eric Mink
Switzerland

*I am a curious, independent, and reliable
Software Engineer specializing in Computer Vision
Research and Development.*

Education

- 2020 – 2023 **ETH Zürich, Master of Computer Science**, with a focus on **Computer Vision**
 2023 Master's thesis "A Learned Style Representation"
 Research on **Style Transfer**, in collaboration with Disney Research.
 2022 Semester Project in 3D Vision: "Semantic SLAM with Quality-Adaptive Properties"
 2021 Semester thesis "Flexible Image Enhancement" with Disney Research.
Deinterlacing with the use of Machine Learning.
 2015 – 2019 ETH Zürich, Bachelor of Computer Science (BSc ETH CS)

Work Experience

- 2024 – Present **Computer Vision Software Engineer R&D** at Lusee (C++, Python)
 Object Recognition, Research, Development, Refactoring, Documentation, DevOps
 2021 Student **Teaching Assistant** for the *Information Security Lab* (Master's Level in CS)
 2019 – 2020 Zivildienstleistender Klassenassistent at Schule Russikon (mandatory civil services)
 2019 Mar – May **Software Engineering** Internship at MP Technology AG (Xamarin, C#)
 2019 Jan – Feb Software-Engineering Internship at Ubique Innovation AG (Android)
 2018 Bachelor's Thesis in collaboration with Autoform in the field of Computer Vision
 2014 – 2017 Freelancing Webmaster for artists and for the local political party "FDP-Russikon"

Background

- 2020 – Present Founding member of the CTF team "Organizers". **1st Place worldwide** in 2022.
 We have regularly been invited to international Cybersecurity competitions and were granted a National Interest Exception by the U.S. Embassy. I have been involved in organizational tasks, infrastructure, in- and external communications, and mainly work on the challenge category "Misc".
 2023 In the **top 7% users on stackoverflow.com** (all-time), top 13% on askubuntu.com.
 2020 – Present CTF-Committee Member. "Flagbot" was the best team in Switzerland in 2020 and the second-best after "Organizers" in 2021. I authored CTF challenges to teach beginners in our Monday Meetings.
 2009 Started learning how to code in C# as a Hobby

Volunteering

- 2019 – 2021 As certified "J+S-Coach", I supervised the organizational committee of youth camps (CEVI Herbstlager) to help them with safety, compliance, and preparing a fun, educational, and sportive week.
 2018 – 2023 Member, and for a semester President, of the Design Committee of the VIS.
 2012 – 2021 Voluntary group leader and camp organizer at YMCA youth organization (CEVI)
 Certifications: "J+S **Lagerleiter** LS/T", "J+S Jugendsport LS/T", "J+S Kindersport"
 Team Lead for organizing wastepaper collections, print communications, and selling self-made braids on Mother's Day in collaboration with a Bakery.

Languages: Fluent: German, English, Swiss German Almost fluent: French Beginner: Russian (A2.2)

Programming Languages

I have some experience in C++ (+OpenCV), Python (+pytorch), Java, C#, Rust, C, Haskell, JavaScript, Kotlin, Godot, Google Dart, Eiffel, Assembly, MySQL, Excel VBA and more. Of the mentioned languages, I prefer Python, Rust, and C# over the others.

Recent Free-time Projects

<https://github.com/lucidBrot>

My current hobby project is a 2d Metroidvania written in Rust with the Bevy ECS. Along the way I sidetracked into making *hexgridspiral*, a crate that provides a hexagonal grid with some interesting geometric properties, which has already been downloaded 1'346 times.

I have created many CTF challenges for Flagbot training sessions and BjörnCTF. Aside from that and from playing CTF, I enjoy creating in my free time. I spent a week of vacation with a friend implementing custom lighting in Godot to obtain shadows the player can physically interact with.

Another project is MineDeeper, a C#/Unity program that we created on a 31-work-hours-weekend. It's a deterministically solvable Minesweeper in 3D, and it can give you hints that not only tell you what you can find out, but also by what logic you could get there.

I wrote an MS Excel VBA Macro several years ago that worked around the shortcomings of the CEVI(YMCA) database. To adapt to new requirements, I completely rewrote it in Rust in 2019. The new version is intuitive to use, reports and fixes malformed database content, merges addresses from the same household and generates a PDF of envelopes that also contain valuable information to speed up the team that fills said envelopes manually.

A Telegram bot I wrote in python allowed you to search a huge compilation of leaked credentials. Enter your e-mail address, possibly get your password in clear text. It had over 24'000 unique users.

Brotkeys.js is a JavaScript library that makes it easy to feature keyboard navigation in a Vimium-like way on your website instead of as a browser addon.

I spent a lot of my time in 2020 setting up my ubuntu laptop with encrypted ZFS root and fixing its many fascinating issues. The speakers used to work only if I rebooted from windows to Linux without a full shutdown, for example. And DNS resolution failed only when I had previously locked the laptop while leaving the house.

Educational Projects at ETH – An Overview

An android version of the game UNO for *Distributed Systems*, Sobel & Canny Edge Detection for *Visual Computing*, and some code optimization tasks for *High Performance Computing*. I wrote a compiler for a subset of the Java language for *Compiler Design* and some cross-validation for finding the best parameters in *Intro To Machine Learning*.

Information Security Lab covered the breadth of the field, including Elliptic Curve Cryptography, implementing TLS 1.3, Cryptographic Reductions, and Software Security.

In *Algolab* I got familiar with the CGAL and Boost C++ libraries by solving competitive algorithmic problems focused on runtime and correctness.

In *Mathematical foundations of Computer Graphics and Vision* I implemented RANSAC, Similarity Image Deformation, Super Resolution, and Image Recoloring by Optimal Transport. For *Shape Modeling* I constructed meshes from implicit surfaces, smoothed them, minimized texture distortion, and deformed them in real-time. In *Computer Vision* I implemented Object Tracking, Image Classification, Camera Calibration, Structure-From-Motion, Multi-View Stereo, and Neural Image Segmentation. For the *3D Vision* project, we sped up Dense SLAM Reconstruction by using semantic properties and for another small semester project I researched the use of Spatial Relations for Object Discovery.

My Semester Project on Neural Video Deinterlacing outperformed State of the Art and my Master Thesis on Image Style Transfer resulted in an interpolable latent Style Space that preserves Content.