Nicolas Dickenmann

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EDUCATION

ETH Zurich Sep 2021 - Jun 2026
M.Sc. in Data Science with focus on Computer Vision and Scalable Computing, Jun 2026 (expected)
B.Sc. in Electrical Engineering and Information Technology, Oct 2024. GPA: 5.6/6

National University of Singapore Feb 2024 - Jun 2024
Semester abroad, completed full semester workload of EECS courses. GPA: 3.74/4

PROJECTS

3D shape assembly pipeline (semester's thesis at Stanford's gradient spaces lab) July 2025 - present

- Extended the existing multi-part shape assembly baseline (published by the lab at Neurips 2025) with a multi-stage approach and managed to reassemble up to 170 parts (up from 64) and decreased chamfer distance by 65%
- Pretrained and benchmarked various point cloud encoders such as PointBERT and PTv3
- Got offer to write my master's thesis as a visiting researcher (VSR)

Real time pipeline for action recognition using scene graph (3d vision course) March 2025 - present

- Built a real-time (5 FPS) pipeline to detect, segment and classify objects; insert into a scene graph on RGB data and train to predict actions. Our method incorporates a predicted depth layer to improve the baseline.
- Currently running final experiments for publishing.

Bachelor's Thesis - A RL Approach to Generate Network Topologies (Grade: 6/6) May 2024 - Oct 2024

- Developed an architecture from scratch utilizing Monte Carlo Tree Search to generate interconnect topologies of diameter-3 for data centers at the *Scalable Parallel Computing Lab* of ETH Zurich with support from *Intel Labs*.
- Profiled, optimized and parallelized the architecture for a 10× increase in self-play games.
- The thesis is not published as of now, but part of my work served as foundation for this paper (see acknowledgments).

A computer agent that helps aging adults navigate their desktops Jan 2025

- Built an agent that provides step-by-step, visual guidance by spotlighting where users should move their cursor using *Anthropic*'s new computer-use api.
- Built in 24 hours at Singapore's largest hackathon *Hack&Roll* and won in the main category.

EXPERIENCE

Toyota Finder
Co-Founder Dec 2024 – Apr 2025

- Built an mvp for a car marketplace using a hybrid approach that combined vector search with llm-generated filters for a vastly improved search experience. Here is a demo with cars scrapped from craigslist in SF.
- Lined up 80k USD in funding from angels, pitched to well known VCs and talked to customers including dealerships.
- Scrapped the project due to lack of long-term interest in the space.

Polybee Singapore
Computer Vision Engineer, Intern Nov 2024 – Feb 2025

- Built a model based on the PF-NET architecture to reconstruct occluded spinach leaves from RGB-D images, achieving a mean leaf length prediction accuracy within ±0.3 cm.
- Trained a time series model to forecast spinach leaf size distribution up to 3 days ahead, achieving 90% historical accuracy within ±0.5 cm.
- Developed an algorithm to detect the orientation of broccoli rows using traditional image processing techniques.

SKILLS

- **Relevant Coursework:** Data Structures & Algorithms, Computer Vision, Computer Architecture, Computer Networks, Intro to Machine Learning, Mathematics for Data Science
- **Languages:** C++, Python, C
- **Tools and Libraries:** Git, PyTorch, Cuda, Wandb, OpenCV, Bash, Nvidia Nsights, Langchain
- **Communication:** English (Fluent), German (Native), Spanish (Limited), French (Limited)
- **Awards:**
  - Winning high school thesis at the Swiss national competition of *Schweizer Jugend forscht*, 2021
  - Mentorship and Scholarship by the *Swiss Study Foundation* (for distinguished students)
  - Won in the main category of Singapore's largest hackathon *Hack&Roll* in 2025
  - Invited to Y Combinator's AI startup school in San Francisco in June 2025