Nicolas Dickenmann

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EDUCATION

ETH Zurich Sep 2021 - Aug 2026
M.Sc. in Data Science with a focus on Computer Vision and Scalable Computing
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 (with Stanford's Gradient Spaces Lab) July 2025 - present

- Extended the existing multi-part shape assembly baseline (Rectified Point Flow) with a multi-stage framework, enabling successful reassembly of objects with up to 115 parts (previously below 64), achieving a 4× reduction in rotational error and a 38% decrease in translation error
- Pretrained and benchmarked multiple point cloud encoders, including PointBERT and PTv3, to evaluate representation performance
- Continuing this work next semester as a Master's Thesis as a Visiting Student Researcher at Stanford University

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

- Built a real-time (1 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 on the baseline.
- Currently testing our method on the large scale EK-100 benchmark for potential publication.

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*.
- Profiled, optimized and parallelized the architecture for a 10× performance increase over the naive implementation.
- 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

Co-Founder AI-native marketplace for cars
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 an improved, personalized search experience. Here is a demo using cars from Craigslist in the bay area.
- Lined up 80k USD in funding from angels, pitched to VCs and got interest from customers (e.g. dealerships).
- Decided to scrap the project due to lack of long-term interest in the car market.

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:** Computer Vision, 3D Vision, Probabilistic AI, Data Structures & Algorithms, Scalable Parallel Computing,
- **Languages:** Python, C++, C
- **Tools and Libraries:** PyTorch, Cuda, Wandb, Bash, Nvidia Nsights, Git, Slurm
- **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