

# Nicolas Dickenmann

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## EDUCATION

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### ETH Zurich

Sep 2021 - Jun 2026

M.Sc. in Data Science, 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

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### 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.

### Superresolution using Local Implicit Image Functions

Sep 2023 - Dec 2023

- Performed domain specific training on medical imaging datasets and conducted quantitative cross validation tests leading to improved PSNR results at the *Computer Vision Lab* of ETH Zurich.
- Adjusted existing model to allow for single image training leading to a strong color shift but reasonable generalization.

### Avionics Engineer in the Student Rocket Team (ARIS)

Dec 2022 - Oct 2023

- Built a hybrid rocket with an autonomous guided recovery system and participated in the *European Rocketry Challenge* (Lisbon, Portugal) in the 9000m category.
- Overcame challenges in working with undocumented code of previous teams to implement sensor drivers.
- Led the sponsoring efforts for the avionics team and closed multiyear sponsoring deals with suppliers.

## EXPERIENCE

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### Polybee

Singapore

Computer Vision Engineer, Intern

Nov 2024 – Feb 2025

- Developing a model to reconstruct occluded spinach leaves using point clouds for improved leaf size measurements and building a time series model to forecast the leaf size distribution of spinach fields.
- Developed an algorithm to detect the orientation of broccoli rows based on multispectral drone footage.
- Implemented a pipeline to train and benchmark models on incoming footage saving two work-hours per week.

### ETH Zurich

Zurich, Switzerland

Teaching Assistant

Aug 2022 - Dec 2022

- Instructed a class of 25+ first year students in a Digital Design course weekly for two hours.
- Fostered an open and collaborative learning environment, and introduced weekly quizzes in my course.

### ETH Model United Nations

Zurich, Switzerland

Head of Conferences, Volunteering

May 2024 – Ongoing

- Overseeing all conference logistics, including conference selection, scheduling, budgeting, delegate selection and coordination of transportation and accommodations for delegates.
- Select delegate at the prestigious *Harvard WorldMUN* conferences in Paris 2023 and Taipei 2024.

## SKILLS

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- **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