Dominik Hollidt

Master Computer Science Student at ETH

Email **dominik.hollidt@googlemail.com**
Phone **+41 786 867998**
Linkedin **dominik-hollidt**
Website **dominikvincent.github.io/**

EDUCATION

Master Studies / September 2020 - now

ETH - Zürich, CH
Excited to study at one of the top 4 universities for computer science I started my master studies at ETH Zürich with the major in Machine Intelligence and minor in Theoretical Computer Science.
Machine Intelligence | Theoretical Computer Science

Exchange Student / August 2019 - June 2020

KTH Royal Institute of Technology - Stockholm, SE
Here I also wrote my Bachelor Thesis about *Optical Flow Algorithms for Event Based Cameras* graded with 1.3 German Score.
Machine Learning | Computer Vision | Robotics | AI

Bachelor Student / Sept. 2017 - June 2020

Technical University Berlin - Berlin, GER
Graduated with 1.3 German Score.
Python | Java | c++ | basic studies

Pre-University Classes / Summer 2017

Free University of Berlin - Berlin, GER
Enthusiastic to start my degree I spent the summer at FU Berlin with introduction classes to computer science.

High School Graduation / July 2017

Eckener Gymnasium - Berlin, GER
Graduated with 1.4 German Score, had exchange year to Thomas Adams School in Wem, Great Britain. Focus on:
Chemistry | Math | Computer Science

PROJECTS

- **Voluntary Semester Thesis Photorealistic Simulation (09.2021-present):** Extending the existing *Formula Student Simulator* to allow for end-to-end simulation with perception in the loop. Algorithms following later in an autonomous pipeline are often heavily dependent on accurate perception output. Using Unreal Engine and AirSim to have perception in the loop training.
- **ETH Formula Student**[1] **AMZ (09.2020 - 09.2021):** Member of the Formula Student team at ETH. Here I worked almost full time in the perception and software infrastructure team:

  Perception: Development of a LiDAR cone color detection method via a self-developed CNN. The method is projecting found 3D lidar clusters down to an 2D image plane to perform color classification. For the data set generation I used an automated process matching process via GNSS. The approach yielded 90% accuracy.
  Also, I developed a KPI tool to visualize and evaluate the perception pipeline output. This helped with the comparison of approaches.
  Finally, I implemented an automated Lidar2Lidar calibration tool.
  Software Infrastructure: Set up a Jenkins CI server and build slaves via Docker. This allowed us to run an evaluation of our pipeline on every commit in our git repository.
  Improved deployment by running the pipeline within Docker together with a script to allow remote control. The Docker images were automatically build via Gitlab CI.
  Finally, I designed a business model together with a business pitch which got 3rd place in the competition. Most valuable was to learn about the whole end-to-end integration of our autonomous pipeline (from SLAM to MPC in control) together with the software-hardware integration, including the physical maintenance of the car.
- **KTH Formula Student (08.2019 - 06.2020):** In the first year in the formula student world I learned about machine perception with the focus on LiDAR.
  Implemented a fast point cloud clustering algorithms to detect cones. This algorithms was significantly faster than traditional 3D clustering algorithms. To assist the computer vision team I provided scripts and Docker images for training in the cloud. Further, I helped with team management.
- **Developed** small phone controlled LED-Controller (2018).
- **Developed** automatic cat feeding machine (2017).

INTERNSHIPS

AVM (06.2020-09.2020): The goal was to perform data analysis of customer support data and automatically link it to crashes and bugs. Developed automated generated data summaries via Spark and Zeppelin, a tool to analyse Wifi speed tests via statistical tests and a tool to see feature relevance via decision trees. The latter allowed for better understanding of bug causing setting configurations.

[1] Formula Student is a student engineering competition with the goal to build an autonomous race car.

SCHOLARSHIPS

- VDI Honoring: For excellent graduation
- ERASMUS Scholarship
- IT-Talents Scholarship
- Nominated for "Stipendium des deutschen Volkes" due to excellent academic perfomance

Skills

Programming Languages: C++, Python, Java, Matlab
Tools/Libraries: ROS, Docker, Keras, NumPy, SciPy, Pandas, Matplotlib/Plotly, OpenCV, dash, cmake
Other: CI/CD, Git, Jenkins, (py)Spark
Languages: German: native, English: C1 fluent, Swedish: B1, Latin

ACTIVITIES / INTERESTS

In my leisure I do a lot of sports. I was a long time member of an athletics team, play badminton and do bouldering. Also I like to play the accordion since I was 6. Moreover, I was a guardian for the yearly trip of the music school.