THOMAS MARKHORST

Amsterdam, The Netherlands
Phone: +31 (6) 11052279 ◇ Email: thomas.c.markhorst@gmail.com ◇

Persevering and problem-solving PhD candidate with good communication skills, as a result of education, work experience and teaching background, graduated cum laude with a MSc in Artificial Intelligence. Strengths include machine learning and computer vision, experience in image enhancement, neural architecture search, synthetic data, neural radiance fields & 6D pose estimation.

EDUCATION

PhD Candidate Computer Vision - TU Delft (NL) *Mar. 2024 – present*
- Researching deep learning techniques for estimating various properties of human bodies.

Master Artificial Intelligence - TU Delft (NL) *Sept. 2021 – Aug. 2023*
- Specializing in Machine/Deep Learning and Computer Vision **GPA: 8.7**
- Graduated cum laude, taking electives in bioinformatics and combinatorial optimization

Bachelor Computer Science - TU Delft (NL) *Sept. 2018 – July 2021*
- Received a 9.5 for BSc thesis at Delft Computer Vision Lab **GPA: 8.9**
- Graduated cum laude and with honours following The Next Generation Robotics Honours Program
- Minored in Robotics at the Delft Robotics Institute

PROFESSIONAL EXPERIENCE

1. **Bosch** Computer Vision Research Intern *(Eindhoven, NL) Dec. 2022 – Aug. 2023*
   - MSc thesis on image enhancement and object classification for security cameras in challenging light
   - Developed Neural Architecture Search to design models for mobile devices while maintaining performance
   - Further refined the thesis after graduation and published in Proceedings of ECCV-24
2. **BMW Group** Computer Vision Research Intern *(Munich, DE) Aug. 2022 – Nov. 2022*
   - Adapted SOTA pose estimation algorithms to stereo vision thus reducing the dependency on depth cameras
   - Developed a 3D synthetic data rendering tool reducing the need for manually labelled data by 90 percent
3. **Krill Robotics** Computer Vision Engineer *(Delft, NL) Feb. 2019 – Sept. 2021*
   - Developed MVP object detection and avoidance for a robotic system on the water and brought the first version to the market in 1.5 years
   - Multiplied funding four times annually by pitching to governmental organizations and companies
4. **Dutch Org. for Applied Science** Software Engineering Intern *(The Hague, NL) Feb. 2017 – Mar. 2018*
   - Developed a robotic vehicle controlled using a VR system enabling remote presence in hazardous situations
   - Built an automated camera system tracking sports balls used for soccer game analysis

- **Sailing Institute Aalsmeer** Senior Instructor *(Aalsmeer, NL) Apr. 2015 – present*
  - Trained over 30 adolescent instructors to become independent by instilling self-reflection
  - Led teams of 10 instructors to work efficiently and pleasurable with 50 kids by applying daily stand-ups and group reflections, while also teaching my own group of 8 kids and collaborating with 6 other seniors

PROJECTS

5. **3D reconstruction of aircraft engines using monovision SLAM** *May 2021 – Aug. 2021*
   - Researched and evaluated SLAM techniques to reconstruct shiny surfaces in 3D to reduce inspection time
   - Developed a hybrid between traditional feature-based SLAM and DL based feature matchers tripling the density of the 3D model

ADDITIONAL INFORMATION

Programming	Python (1-6), PyTorch (1,2,5,6), NumPy (1-6), OpenCV (1-6), Java (6), Docker (2), ROS (2,3), C++ (4,5)
Interests	Sailing, Running, Hiking, Skiing, Salsa, Promotional product videos
Languages	English (Fluent), Dutch (Native), German (Intermediate)