Ismail Kisa

Curriculum Vitae

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Personal Info

Born on 26th of October 1997 in Kirchheim unter Teck.

Education

04/2021 – 04/2023 **M.Sc. Computer Science**, *Eberhard Karls Universität Tübingen*.
Specialization: Robotics, AI and Databases. Grade: 1.7.
Thesis: "Robust Trajectory Prediction for Autonomous Driving".

10/2017 – 02/2021 **B.Sc. Computer Science**, *Eberhard Karls Universität Tübingen*.
Specialization: Numeric. Minor: Physics. Grade: 2.1.
Thesis: "Playing Nine Mens's Morris using a robotic arm based on RGB-D images".
Video: https://www.youtube.com/watch?v=ms8xpr5FZS0&t=171s

09/2014 – 06/2017 **Business High School**, *Jakob Friedrich Schöllkopfschule*, Kirchheim unter Teck.
Specialization: Physics and Computer Science (Java). Grade: 2.3.

Work Experience

08/2023 – 09/2023 **Internship (Data Analyst)**, *Turkish Aerospace Industries*, R&D.
Department: Flight Control Software. Tasks: Generation and analysis of flight data using machine learning methods; summary of the analysis results.

10/2022 – 05/2023 **Internship & Master Thesis**, *Robert Bosch GmbH*, Renningen.
Department: Advanced Autonomous Systems (AAS). Tasks: Development of a deep neural network for behaviour prediction in autonomous driving; publication of the results in a research article.

04/2022 – 08/2022 **Internship (Development Project)**, *Eberhard Karls Universität Tübingen*.
Field: Mobile robotics. Tasks: Development of an autonomously driving robot; implementation of algorithms for mapping, obstacle avoidance, path planning and path following; performing tests in real scenarios.

since 12/2021 **Volunteer Tutor**, *Kirchheim/Teck*.
Tutoring and counseling of a group consisting of 15 elementary school students.

04/2021 – 04/2022 **Research Assistant**, *Eberhard Karls Universität Tübingen*.
Projects and software development related to robot arm control. Tasks: Increase the modularity, efficiency and flexibility of the software architecture; optimise the neural networks for object detection; create a GUI; optimise the game AI.

04/2020 – 04/2021 **Teaching Assistant**, *Eberhard Karls Universität Tübingen*.
Tutoring the "Advanced SQL" and "Functional Programming in Scheme" lectures.

02/2013 – 03/2013 **Internship (Analyst)**, *Die Netzwerker Computernetze GmbH*, Kirchheim unter Teck.
Server analysis; troubleshooting.

Skills

IT C++, SQL, Python (very good)
Robot-Operating-System (ROS), GitHub, PyTorch, Linux, pandas, Java (good)
Matlab, VHDL, R, Unity, Blender (basics).

AI / ML Search algorithms, e.g. Adversial search; Neural networks, e.g. for object detection; Deep learning methods, e.g. reinforcement learning.

Data analysis Analysis of Bundesnetzagentur data for exchange electricity prices with ML methods and summary of results in a paper.

Robotics Autonomously driving robots; Detection, tracking and identification of objects with Micro Aerial Vehicles; Precise control of robot arms to grasp objects; SLAM.

Computer vision Image processing, e.g. implementing filters; ArUco markers; OpenCV; object detection; object classification; ray tracing; stereo matching; pointcloud clustering.

Languages German (native), English (fluent), Turkish (native), French (basic).

Publication

2023 **Marcel Hallgarten, Ismail Kisa, Martin Stoll, Andreas Zell**, Stay on Track: A Frenet Wrapper to Overcome Off-road Trajectories in Vehicle Motion Prediction, arXiv preprint arXiv:2306.00605.

Interests

Programming Programming of a home management system, programming of games/algorithms: Snake, Game 2048, Ludo, Jump 'n' Run, visualization of shortes path algorithms, e.g. Dijkstra/A*.

Hobbies Soccer, Guitar, Jogging.