Stefano Genetti

UNIVERSITY OF TRENTO COMPUTER SCIENCE STUDENT

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Education

University of Trento *Trento, Italy*

MASTER'S DEGREE IN COMPUTER SCIENCE *Sept. 2022 - ongoing*

- **Current GPA:** 29.29/30
- **Relevant coursework:** Data Mining, Distributed Systems, Blockchain, Machine Learning, Deep Learning, Computer Vision, Bio-Inspired Artificial Intelligence, Low-power wireless networking for the Internet of Things

University of Trento *Trento, Italy*

BACHELOR'S DEGREE IN COMPUTER SCIENCE *Sept. 2019 - Sept. 2022*

- **GPA:** 29.59/30
- **Grade** 110/110 *cum laude* | **Final Dissertation:** *"Hypergraph Summarization"* - Supervisor: professor Alberto Montresor - ↗
- **Relevant coursework:** Algorithms and Data Structures, Fundamentals of Robotics, Introduction to Machine Learning, Software Engineering, Systems and Networks, Databases, Operating Systems, Computer Architectures

Experience

E-Agle Trento Racing Team - ↗ *Trento, Italy*

MEMBER OF THE SOFTWARE DRIVERLESS TEAM (FORMULA STUDENT) *Oct. 2022 - ongoing*

- My primary role involves creating a Visual SLAM solution that combines the ORB-SLAM3 algorithm with YOLO. This solution enables vehicle localization on the track while simultaneously identifying cones and their coordinates to construct a map of the circuit.

University of Trento *Trento, Italy*

JUNIOR RESEARCHER *Jan. 2022 - ongoing*

- Researching under professor Alberto Montresor and PhD student Francesco Lotito supervision about Hypergraph Summarization. With our work, we are introducing the first algorithmic solution to the novel problem of Hypergraph Summarization. We are currently refining and extending our results in order to publish a scientific paper.

Alpinformatica - ↗ *Malè, Italy*

INTERN *Jul. 2018 - Aug. 2018*

- Contributed to the hardware and software development of an innovative interactive e-bike charging station "ZEUS". My primary responsibilities involved designing and implementing a "testing box" that incorporated an Arduino board to ensure the proper functioning of the charging stations.

Relevant Projects

From words to bounding boxes: exploring visual grounding using CLIP - git *PyTorch*

UNIVERSITY PROJECT *June 2023 - Sept. 2023*

- Fine-tuning of CLIP to solve the problem of Referring Expression Comprehension by linking natural language descriptions to images to localize target objects. Three distinct architectures have been proposed: a conventional fine-tuning approach, a contrastive learning method inspired by the "fine-tune like you pretrain" concept, and a self-attention-based approach. We rigorously assessed the performance of these networks on the RefCOCOg dataset.

Distributed Key-Value Store with Data Partitioning and Replication - git *Java, Akka*

UNIVERSITY PROJECT *July. 2023 - Aug. 2023*

- Design and development of a distributed system that implements a peer-to-peer key-value storage service inspired by Amazon Dynamo. The distributed hash table efficiently balances data among interconnected peer nodes, ensuring reliability and accessibility through key-based partitioning. The client nodes perform read and write operations on the distributed database which ensures sequential consistency.

Enhancing Certificate Management through Blockchain Technology - git *Solidity*

UNIVERSITY PROJECT *June 2023 - July 2023*

- Development of a distributed application to streamline certificate management for groups using a private blockchain, IPFS, and an Express-based web service.

Evaluating Dataset portions based on query logs - git *Python*

UNIVERSITY PROJECT *Nov. 2022 - Jan. 2023*

- Development of a sophisticated query recommendation system that suggests queries leading to user-relevant data. We propose a hybrid solution which combines content-based and collaborative methods mitigating the limitations of both approaches.

A mobile robot to pick up LEGO bricks - git *ROS, C++, Python*

UNIVERSITY PROJECT *Dec. 2021 - Feb. 2022*

- Exploration of a known environment with a mobile robot equipped with a 6-DoF-mainpulator in order to localize and classify LEGO bricks to be taken to a proper basket according to some specifications.