Jury Andrea D'Onofrio

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Education

Dalle Molle Institute for Artificial Intelligence USI-SUPSI (IDSIA), Master Thesis — Sept 2023 - Sept 2024

Università della Svizzera Italiana, MSc in Artificial Intelligence — Sept 2022 - Sept 2024

Università degli Studi di Milano-Bicocca, BSc in Informatics — Sept 2019 - Mar 2022

Experience

Sales Business Supporter, Lenovo – Segrate, IT — Feb 2022 - Aug 2022

- Generated statistical performance analysis, (Pre-) processed data for B.I. - Tool depiction
- Managed and utilized the CoData database and Microsoft Office suite for analysis

Projects

Autonomous Navigation for Nanodrones — Sept 2023 - Sept 2024

- Developed an autonomous obstacle avoidance system for nanodrones using sensor fusion on the Crazyflie 2.1 platform
- Integrated vision-based CNNs with an ultrasonic sensor for navigation in low-visibility environments, achieving up to 6.87% improvement in accuracy in smoke-filled scenarios compared to baseline models, while maintaining efficiency with at most 3 FPS less than the baselines
- Utilized Python for data post-processing, model training, validation, and testing, while Webots was used to simulate data collection in the created environments

Stability Analysis in Graph Neural Networks — Feb 2024 - May 2024

- Verified stability claims and anti-squashing properties of the Anti-Symmetric Deep Graph Network (A-DGN) on the PubMed dataset, achieving an accuracy improvement up to 30% compared to traditional GCN architectures
- Conducted analysis and simulations using Python for stability verification

Sensor-Based Mapping and Pathfinding in Robotics — Feb 2023 - May 2023

- Developed algorithms for mapping unknown spaces with Robomaster S1 in CoppeliaSim
- Focused on sensor-based room mapping, visualization, and path-finding for real-time processing and accuracy
- Leveraged Python, Matplotlib, Seaborn, and ROS2 for algorithm development and visualization

Enhanced Code Search with Machine Learning — Sept 2023 - Dec 2023

- Optimized search in a knowledge management system by processing large Python codebases
- Trained models (LSI, TF-IDF, and Doc2Vec), achieving 95% precision with LSI
- Employed Python, ast, deap, Gensim, JSON, Matplotlib, Numpy, nltk, os, Pandas, random, Seaborn, shutil, and Sklearn for code search and data analysis. Used t-SNE for performance visualization

Smart Intrusion Detection for IoT Devices — Sept 2022 - Dec 2022

- Developed a smart intrusion detection system integrating ToF sensors, a camera, and fingerprint authentication for real-time occupancy monitoring
- Built the system using Arduino for sensor integration and real-time monitoring, achieving approximately 80% reliability due to the sensitivity of the fingerprint sensor

Technologies

Programming: C, C#, CSS, Java, HTML, LaTeX, Matlab, Python, SQL

Tools: Android Studio, Arduino, GAP8, Git, Linux, ROS2, Tableau, VS Code

Methodologies: Agile, Scrum

Languages: Italian (Native), English (C1)

Hobbies: Football, Karate, Swimming, Volleyball