Alessandro Simoni, Ph.D.

Deep Learning Research Engineer

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Links: 🏠 alexj94.github.io | 🔗 LinkedIn | 🐙 GitHub | 🎓 Google Scholar

Summary

I am a Deep Learning Research Engineer with experience in image reconstruction, diffusion models and semantic segmentation in industrial scenarios. I got my Ph.D. from the University of Modena and Reggio Emilia in April 2024 with an academic experience in 3D Human-Centric Scene Understanding and 3D Object Reconstruction. I have a strong passion for research and advancing the field of Deep Learning.

Work Experience

Covision Lab   April 2024 – (Now)
Deep Learning Research Engineer   Brixen, Italy

- **Activities**: Diffusion Models, Discrete Tomography, Semantic Segmentation, Classification

AlmageLab (University of Modena and Reggio Emilia)   May 2020 – April 2024
Research Fellow / PhD Student   Modena, Italy

- **Activities**: 3D Object Reconstruction (neural rendering, NeRF), 3D Skeleton Pose Estimation

Education

University of Modena and Reggio Emilia   November 2020 – April 2024
Ph.D. in Deep Learning and Computer Vision   Modena, Italy

- **Thesis**: *From Images to 3D Space: The Role of Semantic Keypoints for 3D Perception*

University of Modena and Reggio Emilia   September 2017 – February 2020
MSc in Computer Science   Modena, Italy

University of Modena and Reggio Emilia   September 2013 – February 2017
BSc in Computer Science   Modena, Italy

Skills

Spoken languages: Italian (mothertongue), English (C1 certified)
Programming languages: Python (proficiency), C/C++ (basic)
Libraries & Tools: PyTorch, OpenCV, Numpy, TensorRT, VSCode, PyCharm
Deep Learning: 3D Pose Estimation, 3D Reconstruction, Image Diffusion Models, Image Reconstruction, Semantic Segmentation, Image Classification

Relevant Publications (* = equal contribution, full list on Google Scholar)

Bounding Box-Guided Diffusion for Synthesizing Industrial Images and Segmentation Map   2025
A. Simoni *, F. Pelosin * CVPRW

3D Pose Nowcasting: Forecast the future to improve the present   2025
A. Simoni *, F. Marchetti *, G. Borghi, F. Becattini, L. Seidenari, R. Vezzani, A. Del Bimbo   CVIU

Dynamic Label Injection for Imbalanced Industrial Defect Segmentation   2024
E. Caruso *, F. Pelosin *, A. Simoni *, M. Boschetti   ECCVW

KRONC: Keypoint-based Robust Camera Optimization for 3D Car Reconstruction   2024
D. Di Nucci *, A. Simoni *, M. Tomei, L. Ciuffreda, R. Vezzani, R. Cucchiara   ECCVW

Depth-Based Privileged Information for Boosting 3D Human Pose Estimation on RGB   2024
A. Simoni, F. Marchetti, G. Borghi, F. Becattini, D. Davoli, L. Garattoni, G. Francesca, L. Seidenari, R. Vezzani   ECCVW

Depth-based 3D human pose pose refinement: Evaluating the refinet framework 2023

A. D'Eusanio, **A. Simoni**, S. Pini, G. Borghi, R. Vezzani, R. Cucchiara PRL

Semi-Perspective Decoupled Heatmaps for 3D Robot Pose Estimation from Depth Maps 2022

A. Simoni, S. Pini, G. Borghi, R. Vezzani IROS + RA-L

Multi-category mesh reconstruction from image collections 2021

A. Simoni *, S. Pini *, R. Vezzani, R. Cucchiara 3DV

Future urban scene generation through vehicle synthesis 2021

A. Simoni, L. Bergamini, A. Palazzi, S. Calderara, R. Cucchiara ICPR

Certifications

First Certificate in English (FCE) December 2020