
Personal Information

Name	Pierluigi Zama Ramirez, PhD
Date of Birth	December 29th, 1992
Citizenship	Italian
Address	Viale del Risorgimento 2, 40136, Bologna
Email	pierluigi.zama@unibo.it (primary) zamapierluigi@hotmail.it (secondary)
Website	https://pierlui92.github.io/
Code	https://github.com/pierlui92
Google Scholar	https://scholar.google.com/citations?user=OAYAmKYAAAAJ&hl=it
ResearchGate	https://www.researchgate.net/profile/Pierluigi-Zama-Ramirez-2
Scopus	https://www.scopus.com/authid/detail.uri?authorId=57209021298
Semantic Scholar	https://www.semanticscholar.org/author/Pierluigi-Zama-Ramirez/80804241
DBLP	https://dblp.org/pid/228/7804.html
ORCID	https://orcid.org/0000-0001-7734-5064



About Me

Short Bio I received an M.S. degree in Computer Engineering and a PhD in Computer Engineering from the University of Bologna (Italy) in 2017 and 2021, respectively. I am a computer science researcher at the Department of Computer Science and Engineering (DISI) of the University of Bologna. I am covering the role of Assistant Professor ("RTDA") in the same department.

Research Interests

Deep Visual Perception from RGB and Other Sensors	Inferring scene properties from data captured by sensors such as RGB cameras, LiDARs, or Multi-Spectral cameras is essential to any vision applications. The set of tasks addressing this goal employing deep neural networks is named <i>Deep Visual Perception</i> . In my research, I have developed novel techniques for many tasks, ranging from semantic segmentation, depth estimation, optical flow, camera pose estimation, camera calibration, and registration. Examples of publications in this field are [P2], [P5], [P7], [P10], [P11], [P17], and [J4].
3D Computer Vision	Since the early days of computer vision, researchers have been processing images stored as two-dimensional grids of pixels carrying intensity or color measurements. But the world that surrounds us is 3D, motivating researchers to try to process 3D data sensed/reconstructed from surfaces. In my research, I have developed approaches for point cloud classification and segmentation. Moreover, recently, I investigated a novel research direction, i.e., applying deep learning to 3D data represented as neural implicit functions. Examples of publications in this field are [P6] and [P14].
Weakly Supervised Learning	Machine learning and deep learning approaches require numerous training data with annotation to perform accurately in unseen environments. However, collecting such annotations is a time-consuming and tedious task. In my research, I developed several techniques to address this problem, ranging from transfer learning, unsupervised domain adaptation, self-supervised techniques, or representation learning approaches. Examples of publications in this field are [P3], and [J2], [J3].

Education

- 2017 – 2021 **Ph.D.** in Computer Science and Engineering (*Bologna, Italy*)
Fundings: T3Lab
PhD Thesis: “*Deep Scene Understanding with Limited Training Data.*” approved after examination by Prof. Gabriel Brostow and Prof. Elisa Ricci.
Thesis available at: http://amsdottorato.unibo.it/9815/1/zamaramirez_pierluigi_tesi.pdf
Supervisor: Prof. Luigi Di Stefano
- 2019 International Computer Vision Summer School (*Sicily, Italy*)
- 2017 International Summer School on Deep Learning (*Bilbao, Spain*)
- 2014 – 2017 **Master Degree** in Computer Science and Engineering (*Bologna, Italy*)
110L/110 - *Magna cum Laude*
Thesis: “*Estimation of depth and semantics by a CNN trained on computer-generated and real data*”
Supervisor: Prof. Luigi Di Stefano
- 2011 – 2014 **Bachelor Degree** in Computer Science and Engineering (*Bologna, Italy*)
110L/110 - *Magna cum Laude*
Thesis: “*Control of peripheral devices mapped on a Zynq platform with Linux*”
Supervisor: Prof. Stefano Mattoccia

Work Experience

- 03/2024 – Now **Assistant Professor** @ “Department of Computer Science and Engineering (DISI)” (*Bologna, Italy*)
- 03/2021 – 2024 **Postdoctoral Researcher** @ “Department of Computer Science and Engineering (DISI)” (*Bologna, Italy*)
Fund Manager & Advisor: Luigi Di Stefano.
- 20/04/2020 – 20/09/2020 **Research Intern** @ “Google Zurich” (*Zurich, Switzerland*)
Supervisor: Prof. Federico Tombari
Job Description: Development of novel views synthesis techniques for image editing.
- 01/07/2017 – 31/10/2017 **Scholarship** @ Bierrebi (*Bologna, Italy*)
Advisor: Luigi Di Stefano
Job Description: Development of novel technologies for:
 - Anomaly detection of fabrics on an industrial carry roller.
 - Calibration techniques for linear cameras.

Projects

- 09/2023 – Now **Title:** Line Detection for Large Urban Environments Mapping
Project Supervisor: Prof. Luigi Di Stefano
External Supervisor: Alioscia Petrelli ([SINA](#))
Description: Developing line detection techniques for large point clouds obtained by LiDAR sensors in urban scenarios. The deployed algorithms will be part of the SINA working pipeline.
Role: As a senior researcher, I am supervising a PhD student who is working on the project.
- 03/2023 – Now **Title:** Qualitrack 4.0
Project Supervisor: Prof. Luigi Di Stefano
External Supervisor: Donato Laico ([SACMI](#)), Gildo Bosi ([SACMI](#))
Description: Developing novel anomaly detection techniques from RGB images and 3D data in industrial manufacturing. The deployed algorithms will be part of several SACMI products.
Role: As a senior researcher, I am supervising a PhD student who is working on the project.
- 03/2021 – 03/2022 **Title:** Multimodal Sensor Registration

Project Supervisors: Prof. Luigi Di Stefano, Prof. S. Mattoccia, Dr. M. Poggi, Prof. S. Salti

External Supervisor: Jussi Yli-Äyhö ([Huawei](#))

Collaborator: Dr. Fabio Tosi

Description: Developing a new core technology for accurately registering two images captured by different modalities, such as an RGB and a multi-spectral (MS) sensor, using self-supervised deep learning techniques.

Role: Conceive and develop new ideas to achieve the objective.

Scientific Deliverables: The following is a list of the scientific deliverables produced in the project. These deliverables include flow estimation methods for different sensor combinations, a live demo of flow estimation, a feasibility study report, an online adaptive flow estimation method, evaluation methodologies and acquisition setup definition, a large annotated dataset with ground truth, and a protocol for evaluating the performance of developed methodologies:

- D.1.1: Flow estimation method for heterogeneous RGB sensors
- D.1.2: Flow estimation method for an RGB and a multi-spectral (MS) camera
- D.1.3: Live demo of flow estimation from heterogeneous RGB sensors
- D.1.4: Feasibility study report on flow estimation from RGB and event-based cameras
- D.1.5: On-line adaptive flow estimation method from an RGB camera and an MS sensor
- D.2.1: Evaluation methodologies and acquisition setup definition
- D.2.2: Large annotated dataset with ground truth
- D.2.3: Protocol for evaluating the performance of developed methodologies

Papers and Code: In this project, 4 papers were published at the CVPR and 3DV conferences, [P7], [P10], [P11], [P12]. One of these papers received the best honorable mention award at the 3DV 2021 conference [P7].

01/11/2017 – 01/05/2018

Title: AIDA - Adaptive Industrial Automation Through Cyber-Physical Vision System

Project Supervisor: Prof. Luigi Di Stefano

External Supervisor: Claudio Salati ([T3Lab](#)), Claudio Saporetti ([Datalogic](#))

Description: AIDA is a co-funded Emilia-Romagna Region project for Industry 4.0.

Website: <https://www.youtube.com/watch?v=UB00XwW5Gz4&t=47s>

Role: Development of a deep learning architecture aimed at detecting hazardous materials and estimating the orientation of packages on an industrial carry roller.

Awards

- 2021 **Best Paper Honorable Mention** to our work “*Neural Disparity Refinement for Arbitrary Resolution Stereo*” - International Conference on 3D Vision (**3DV 2021**) (<https://3dv2021.surrey.ac.uk/prizes/>)

Technologies & Languages

Languages Italian: Mothertongue

English, CEFR: C1, IELTS, 11/02/2017, Overall Band 7.0/9.0

Spanish, CEFR: B2

Programming languages C, C++, C#, Java, Python, Lua, Scala, Prolog, VHDL, LaTeX

CV and ML frameworks OpenCV, Tensorflow, PyTorch

Graphics Blender, Unity

Development VS, VS Code, Git

Teaching Activities

- 2024 - Now **Assistant Professor**, Fundamentals of Computer Science (Module 2) @ Department of Electrical, Electronic, and Information Engineering "Guglielmo Marconi" (Bologna) (<https://www.unibo.it/it/studiare/dottorati-master-specializzazioni-e-altra-formazione/insegnamenti/insegnamento/2023/498955>).
- 2024 - 2024 **Instructor for Training Course**, Fundamentals of Computer Vision @ SCM Group (Rimini).
- 2023 - 2024 **Adjunct Professor**, Fundamentals of Computer Science (Module 2) @ Department of Electrical, Electronic, and Information Engineering "Guglielmo Marconi" (Bologna) (<https://www.unibo.it/it/didattica/insegnamenti/insegnamento/2022/483848>). Student Satisfaction Rate: 84,6% (Media CdS: 74,3%)
- 2023 **PhD Course Teacher**, "*Deep Scene Understanding From Images for Monitoring Applications*", PhD course in EIT4SEMM, University of Bologna (Bologna, Italy) with Dr. Matteo Poggi and Dr. Fabio Tosi, May 2023, 20 hours. (https://cvlab-unibo.github.io/deep_scene_understanding_from_images_for_monitoring_applications/)
- 2022 **PhD Course Teacher**, "*Deep Scene Understanding From Images*", PhD course in Computer Science and Engineering, University of Bologna (Bologna, Italy) with Dr. Matteo Poggi and Dr. Fabio Tosi, May 2022, 20 hours. (https://cvlab-unibo.github.io/deep_scene_understanding_from_images/)
- 2022 - Now **Teaching Assistant**, "Reti Logiche T - Automation, Electronic, and Telecommunication Engineering", @ University of Bologna (*Bologna, Italy*) with Prof. Tullio Salmon Cinotti, ~ 180 students
- 2019 - Now **Teaching Assistant**, "Computer Vision and Image Processing - Computer Science and Engineering", @ University of Bologna (*Bologna, Italy*) with Prof. Luigi Di Stefano, ~ 150 students

Co-Supervised Students (Non-Exhaustive List)

Bachelor Thesis

- Pumilia, Andrea "Metodologie di Corrispondenza Stereo Basate su Deep Learning per Superfici Altamente Riflettenti e Trasparenti: Dataset e Architettura"
- Chiarini, Alessandro "Procedural generation of a city model for training neural networks"
- Zoffoli, Mattia "An Analysis of Training a Deep Object Detector with Synthetic Data"
- Nadalini, Alessandro "Procedural Generation of 3D city models with Blender"
- Fabiani, Federico "Semantic segmentation of ulcers by deep convolutional neural networks"
- Damato, Alessandro "Synthetic urban dataset generation through Blender"
- Malizia, Chiara "Convolutional Neural Networks for product sorting in fruit and vegetable sector"
- Lella, Luigi "Tool for annotating 3D data in Virtual Reality"

Master Thesis

- Malizia, Chiara "High-Resolution Monocular Depth Estimation with Stereo Proxy Supervision"
- Menchetti, Daniele "Domain adaptation per classificazione di pointcloud mediante pseudo-annotazioni"
- Costanzino, Alex "Mitigating non-Lambertian surfaces issues in Stereo Matching with Neural Radiance Fields"
- Carloni, Gaia "Deep refinement of a deep semantic segmentation network"
- Domeniconi, Federico "Deep Photometric Stereo"
- Paternes, Claudio "3D Semantic Labeling by Virtual Reality"
- Cardace, Adriano "Learning Features Across Tasks and Domains"

Internships

- Lella, Luigi "Perfezionamento, ingegnerizzazione e validazione sperimentale di un tool innovativo per l'annotazione di dati 3D basato su Virtual Reality (VR)"
- Carboni, Ilenia "Interfacciamento di occhiali smart RayBan Stories e acquisizione di un dataset stereo"
- Mostafa, Hazem "Acquisizione di un dataset stereo in ambiente outdoor utilizzato per l'allenamento di una rete neurale per stereo-matching tramite algoritmi proxy-supervised."
- Mohamed Hassan

Organization of Workshops

- [W3] "TRICKY 2024: Transparent & Reflective objects In the wild Challenges", **ECCV 2024** (Milan, Italy) [<https://sites.google.com/view/eccv24-tricky-workshop/>] - **Role:** Organizer
- [W2] "NTIRE 2024: 9th New Trends in Image Restoration and Enhancement Workshop and Challenges", **CVPR 2024** (Seattle, Washington) [<https://cvlab-unibo.github.io/booster-web/ntire24/>][<https://cvlai.net/ntire/2024/>] - **Role:** Organizer
- Track 1 - HR Depth from Images of Specular and Transparent Surfaces - Stereo [<https://codalab.lisn.upsaclay.fr/competitions/17515>]
- Track 2 - HR Depth from Images of Specular and Transparent Surfaces - Mono [<https://codalab.lisn.upsaclay.fr/competitions/17516>]
- [W1] "NTIRE 2023: 8th New Trends in Image Restoration and Enhancement Workshop and Challenges", **CVPR 2023** (Vancouver, Canada) [<https://cvlab-unibo.github.io/booster-web/ntire/>][<https://cvlai.net/ntire/2023/>] - **Role:** Organizer
- Track 1 - HR Depth from Images of Specular and Transparent Surfaces - Stereo
- Track 2 - HR Depth from Images of Specular and Transparent Surfaces - Mono

Organizational Roles

- 2024 - Now Co-Chair of the Admission Test Committee for the Mechatronics Degree Program
- 2024 - Now Member of the Internship Coordination Team for the Mechatronics Degree Program
- 2024 - Now Member of the Organization Team for the University Orientation Event for High Schools – Mechatronics Degree Program

Live Presentations at Workshops and Conferences

2024

- Milan, Italy Presentation of [P23] at the European Conference of Computer Vision (ECCV) 2024.
- Milan, Italy Workshop Chair of [W3] at the European Conference of Computer Vision (ECCV) 2024.
- Dakar, Senegal Invited Talk at the Weakly Supervised Computer Vision Workshop in the conference Deep Learning Indaba 2024 entitled "Neural Processing of 3D Neural Fields". Recorded Talk: <https://www.youtube.com/watch?v=OEyVWnLMEso&t=3900s>.
- Lugo, Italy Invited Talk at Rotary Club entitled "New Frontiers of Artificial Intelligence".

2023

- Paris, France Presentation of [P17] at the International Conference on Computer Vision (ICCV) 2023.
- Milan, Italy Presentation of [P17] at the Synapse 2023, the AI Symposium organized by Bending Spoons.
- Vancouver, Canada Presentation of [P15], [P16], and [W1] at the Computer Vision and Pattern Recognition Conference (CVPR) 2023.
- Kigali, Rwanda The ICLR 2023 work, [P14], was selected to be presented at the "Neural Fields across Fields: Methods and Applications of Implicit Neural Representations" workshop held in conjunction with ICLR 2023.

2022

- New Orleans, USA Poster presentation of [P10] and [P11] at the Computer Vision and Pattern Recognition Conference (CVPR) 2022.

2021

- Online Poster presentation of [P6] and [P7] at the International Conference on 3D Vision (3DV) 2021.

2020

- Online Oral presentation of [P4] at the 3rd International Conference on Artificial Intelligence & Virtual Reality.
- Online Poster presentation of [P6] at the Computer Vision and Pattern Recognition Conference (CVPR) 2020.

2019

- Seoul, Korea Poster presentation of [P3] at the International Conference on Computer Vision (ICCV) 2021
- Los Angeles, USA Poster presentation of the work "Shooting Labels by Virtual Reality" at the Third Workshop on Computer Vision for AR/VR, held in conjunction with CVPR 2019. Related Paper: https://static1.squarespace.com/static/5c3f69e1cc8fedbc039ea739/t/5d01638662182d0001b6f7f6/1560372111582/9_CVPR_2019_VR.pdf

2018

- Perth, Australia Poster presentation of [P2] at the 14th Asian Conference on Computer Vision
- Nice, France Oral presentation of [P1] at the Third IEEE International Image Processing, Applications and Systems Conference
- Bologna, Italy Poster presentation of the work "Novel Generative Model to Synthesize Realistic Training Images" at SIAM Conference on Imaging Science 2018, <https://www.siam-is18.dm.unibo.it/presentations/874.html>
- Bologna, Italy Oral presentation of the work "Large Scale 3D Semantic Mapping. European Machine Vision Association Forum" at the European Machine Vision Forum (EMVA) 2018
- Bologna, Italy Oral presentation of the work "Domain Adaptation by a Semantic-Aware GAN" at the European Machine Vision Forum (EMVA) 2018

Past and Ongoing Collaborations

- Google Zurich** – Switzerland (Dr. Alessio Tonioni, Prof. Federico Tombari) *publications*
- Huawei** – Finland (Jussi Yli-Äyhö) *research projects*
- Eyecan.ai** – Bologna (Daniele De Gregorio) *publications*
- ETH** – Switzerland (Prof. Radu Timofte) *workshop organization*
- Sacmi** – Italy (Gildo Bosi, Donato Laico) *research projects*
- SINA** – Italy (Alioscia Petrelli) *applied research projects*

Reviewing Services (Non-exhaustive list)

- NeurIPS** - Conference on Neural Information Processing Systems (2024)
- CVPR** - IEEE Conference on Computer Vision and Pattern Recognition (2021,2022,2023)
- ECCV** - European Conference on Computer Vision (2022, 2024)
- ICCV** - IEEE International Conference on Computer Vision (2021,2023)
- WACV** - IEEE/CVF Winter Conference on Applications of Computer Vision (2022)
- IROS** - IEEE/RSJ International Conference on Intelligent Robots and Systems (2018, 2023)
- ECAI** - European Conference on Artificial Intelligence (2020)
- NTIRE** - New Trends in Image Restoration and Enhancement Workshop and Challenges (2023, 2024)

Publications

All publications are peer-reviewed conference or journal publications and top tier in the respective field. **ICCV**, **ECCV**, **NeurIPS**, **ICLR**, and **CVPR** are highly competitive with acceptance rates of less than 30%. **CVPR** and **TPAMI** are the most highly cited IEEE conference (<https://research.com/conference-rankings/computer-science>) and journal (<https://research.com/journals-rankings/computer-science>) with the highest impact in Engineering and Computer Science. **CVPR**, **NeurIPS**, **ICLR**, and **ICCV** are among the most impactful conferences in all of computer science.

* indicates *Joint first authorship*.

Journals

- [J6] **P. Zama Ramirez***, L. De Luigi*, D. Sirocchi*, A. Cardace, R. Spezialetti, F. Ballerini, S. Salti, L. Di Stefano, "Deep Learning on Object-centric 3D Neural Fields", in IEEE Transactions on Pattern Analysis and Machine Intelligence, <https://doi.org/10.1109/TPAMI.2024.3430101>

- [J5] F. Tosi, F. Aleotti, **P. Zama Ramirez**, M. Poggi, S. Salti, S. Mattoccia and L. Di Stefano, “*Neural Disparity Refinement*” in IEEE Transactions on Pattern Analysis and Machine Intelligence, <https://doi.org/10.1109/TPAMI.2024.3411292>
- [J4] **P. Zama Ramirez**, A. Costanzino, F. Tosi, M. Poggi, S. Salti, S. Mattoccia and L. Di Stefano, “*Booster: a Benchmark for Depth from Images of Specular and Transparent Surfaces*” in IEEE Transactions on Pattern Analysis and Machine Intelligence, <https://doi.org/10.1109/TPAMI.2023.3323858>
- [J3] A. Cardace, A. Conti, **P. Zama Ramirez**, R. Spezialetti, S. Salti and L. Di Stefano, “*Boosting Multi-Modal Unsupervised Domain Adaptation for LiDAR Semantic Segmentation by Self-Supervised Depth Completion*”, in IEEE Access, vol. 11, pp. 85155-85164, 2023, <https://doi.org/10.1109/ACCESS.2023.3304542>.
- [J2] **P. Zama Ramirez***, A. Cardace*, L. D. Luigi*, A. Tonioni, S. Salti and L. D. Stefano, "Learning Good Features to Transfer Across Tasks and Domains," in IEEE Transactions on Pattern Analysis and Machine Intelligence, <https://doi.org/10.1109/TPAMI.2023.3240316>.
- [J1] D. De Gregorio, M. Poggi, **P. Zama Ramirez**, G. Palli, S. Mattoccia and L. Di Stefano, "Beyond the Baseline: 3D Reconstruction of Tiny Objects With Single Camera Stereo Robot," in IEEE Access, vol. 9, pp. 119755-119765, 2021, <https://doi.org/10.1109/ACCESS.2021.3108626>.

Proceedings

- [P25] F. Tosi, **P. Zama Ramirez**, M. Poggi. “*LLaNA: Large Language and NeRF Assistant*”. Thirty-Eighth Annual Conference on Neural Information Processing Systems (**NeurIPS**, A++ GRIN Rank), 2024. <https://andreamaduzzi.github.io/llana/>
- [P24] **P. Zama Ramirez**, A. Costanzino, F. Tosi, M. Poggi, L. Di Stefano, J.-B. Weibel, D. Bauer, D. Antensteiner, M. Vincze, J. Li, Y. Huang, J. Zhang, Y. Wang, J. Zheng, L. Shen, Z. Cao, Z. Song, Z. Wang, R. Zhu, H. Zhang, R. Li, J. Wu, X. Li, Y. Zhu, J. Sun, Y. Zhang, P. Sun, Y. Yao, W. Zhao, K. Jiang, J. Jiang, M. Lavreniuk, P. Li, J.-L. Wang “*TRICKY 2024 Challenge on Monocular Depth from Images of Specular and Transparent Surfaces*”. The 18th European Conference on Computer Vision Workshops (**ECCVW**), 2024.
- [P23] F. Tosi, **P. Zama Ramirez**, M. Poggi. “*Diffusion Models for Monocular Depth Estimation: Overcoming Challenging Conditions*”. The 18th European Conference on Computer Vision (**ECCV**, A++ GRIN Rank), 2024. <https://diffusion4robustdepth.github.io/>
- [P22] **P. Zama Ramirez**, F. Tosi, L. Di Stefano, R. Timofte, A. Costanzino, M. Poggi, S. Salti, S. Mattoccia, .. “*NTIRE 2024 Challenge on HR Depth From Images of Specular and Transparent Surfaces*”. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2024, https://openaccess.thecvf.com/content/CVPR2024W/NTIRE/papers/Ramirez_NTIRE_2024_Challenge_on_HR_Depth_from_Images_of_Specular_CVPRW_2024_paper.pdf.
- [P21] A. Costanzino, **P. Zama Ramirez**, M. Del Moro, A. Aiezzo, G. Lisanti, L. Di Stefano. “*Test Time Training for Industrial Anomaly Segmentation*”. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2024, https://openaccess.thecvf.com/content/CVPR2024W/VAND/papers/Costanzino_Test_Time_Training_for_Industrial_Anomaly_Segmentation_CVPRW_2024_paper.pdf.
- [P20] F. Ballerini, **P. Zama Ramirez**, R. Mirabella, S. Salti, L. Di Stefano. “*Connecting NeRFs, Images, and Text*”. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2024, https://openaccess.thecvf.com/content/CVPR2024W/INRV/papers/Ballerini_Connecting_NeRFs_Images_and_Text_CVPRW_2024_paper.pdf.
- [P19] A. Costanzino*, **P. Zama Ramirez***, G. Lisanti, L. Di Stefano “*Multimodal Industrial Anomaly Detection by Crossmodal Feature Mapping.*”, IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**, A++ GRIN Rank), 2024, https://openaccess.thecvf.com/content/CVPR2024/papers/Costanzino_Multimodal_Industrial_Anomaly_Detection_by_Crossmodal_Feature_Mapping_CVPR_2024_paper.pdf
- [P18] A. Cardace, **P. Zama Ramirez**, F. Ballerini, S. Salti, L. Di Stefano “*Neural Processing of Tri-plane Hybrid Neural Fields.*”, The Twelfth International Conference on Learning Representations (**ICLR**, A++ GRIN Rank), 2024, <https://openreview.net/pdf?id=zRkM6UcA22>

- [P17] A. Costanzino*, **P. Zama Ramirez***, M. Poggi*, F. Tosi, S. Mattoccia and L. Di Stefano, "Learning Depth Estimation for Transparent and Mirror Surfaces" 2023 IEEE/CVF International Conference on Computer Vision (ICCV, A++ GRIN Rank), pp.9244-9255, https://openaccess.thecvf.com/content/ICCV2023/papers/Costanzino_Learning_Depth_Estimation_for_Transparent_and_Mirror_Surfaces_ICCV_2023_paper.pdf
- [P16] **P. Zama Ramirez**, F. Tosi, L. Di Stefano, R. Timofte, A. Costanzino, M. Poggi, S. Salti, S. Mattoccia, J. Shi, D. Zhang, Y. A, Y. Jin, D. Li, C. Li, Z. Liu, Q. Zhang, Y. Wang, S. Yin, , "NTIRE 2023 Challenge on HR Depth From Images of Specular and Transparent Surfaces". 2023, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2023, pp. 1384-1395. https://openaccess.thecvf.com/content/CVPR2023W/NTIRE/papers/Ramirez_NTIRE_2023_Challenge_on_HR_Depth_From_Images_of_Specular_CVPRW_2023_paper.pdf
- [P15] A. Cardace, **P. Zama Ramirez**, S. Salti and L. Di Stefano, "Exploiting the Complementarity of 2D and 3D Networks to Address Domain-Shift in 3D Semantic Segmentation", 2023, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, pp. 98-109 https://openaccess.thecvf.com/content/CVPR2023W/WAD/papers/Cardace_Exploiting_the_Complementarity_of_2D_and_3D_Networks_To_Address_CVPRW_2023_paper.pdf
- [P14] L. De Luigi*, A. Cardace*, R. Spezialetti*, **P. Zama Ramirez**, S. Salti, L. Di Stefano, "Deep Learning on Implicit Neural Representations of Shapes", The Eleventh International Conference on Learning Representations (ICLR, A++ GRIN Rank), 2023, <https://openreview.net/forum?id=OoOIW-3uadi>
- [P13] A. Cardace, R. Spezialetti, **P. Zama Ramirez**, S. Salti and L. D. Stefano, "Self-Distillation for Unsupervised 3D Domain Adaptation," 2023 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV, A GRIN Rank), Waikoloa, HI, USA, 2023, pp. 4155-4166, <https://doi.org/10.1109/WACV56688.2023.00415>.
- [P12] M. Poggi*, **P. Zama Ramirez***, F. Tosi*, S. Salti, L. Di Stefano, S. Mattoccia, "Cross-Spectral Neural Radiance Fields", at the 2022 International Conference on 3D Vision (3DV), Prague, Czech Republic, 2022, pp. 606-616, <https://doi.org/10.1109/3DV57658.2022.00071>.
- [P11] **P. Zama Ramirez***, F. Tosi*, M. Poggi*, S. Salti, L. Di Stefano, S. Mattoccia, "Open Challenges in Deep Stereo: the Booster Dataset", 2022 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR, A++ GRIN Rank), 2022, pp. 21136-21146, <https://doi.org/10.1109/CVPR52688.2022.02049>.
- [P10] F. Tosi*, **P. Zama Ramirez***, M. Poggi*, S. Salti, L. Di Stefano, S. Mattoccia, "RGB-Multispectral Matching: Dataset, Learning Methodology, Evaluation" 2022 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR, A++ GRIN Rank), 2022, pp. 15937-15947, <https://doi.org/10.1109/CVPR52688.2022.01549>.
- [P9] A. Cardace, L. De Luigi, **P. Zama Ramirez**, S. Salti and L. Di Stefano, "Plugging Self-Supervised Monocular Depth into Unsupervised Domain Adaptation for Semantic Segmentation," 2022 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV, A GRIN Rank), Waikoloa, HI, USA, 2022, pp. 1999-2009, <https://doi.org/10.1109/WACV51458.2022.00206>.
- [P8] A. Cardace, **P. Zama Ramirez**, S. Salti and L. Di Stefano, "Shallow Features Guide Unsupervised Domain Adaptation for Semantic Segmentation at Class Boundaries," 2022 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV, A GRIN Rank), Waikoloa, HI, USA, 2022, pp. 2010-2020, <https://doi.org/10.1109/WACV51458.2022.00207>.
- [P7] F. Aleotti*, F. Tosi*, **P. Zama Ramirez***, M. Poggi, S. Salti, L. Di Stefano, S. Mattoccia, "Neural Disparity Refinement for Arbitrary Resolution Stereo", 2021 International Conference on 3D Vision (3DV), 2021, pp. 207-217, <https://doi.org/10.1109/3DV53792.2021.00031>. (ORAL) (Best Paper Honorable Mention Award)
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Released Datasets and Code

Scientific Datasets (Non-exhaustive list)

- | | |
|-----------------------------------|--|
| Booster Dataset | Dataset related to [P11], https://amsacta.unibo.it/6876/ Project Page: https://cvlab-unibo.github.io/booster-web/ |
| Booster Dataset - Monocular Split | Dataset related to [U2], https://amsacta.unibo.it/7161/ Project Page: https://cvlab-unibo.github.io/booster-web/ |
| RGB-MS Dataset | Dataset related to [P10], Dataset: http://amsacta.unibo.it/6877/ , Project Page: https://cvlab-unibo.github.io/rgb-ms-web/ |
| X-NeRF dataset | Dataset related to [P12], Dataset: https://amsacta.unibo.it/7142/ , Project Page: https://cvlab-unibo.github.io/xnerf-web/ |

Codes (Non-exhaustive list)

- | | |
|---------------------|---|
| inr2vec | Code related to [P14], https://cvlab-unibo.github.io/inr2vec/ |
| FeatureDistillation | Code related to [P13], https://cvlab-unibo.github.io/FeatureDistillation/ |
| D4 | Code related to [P9], https://github.com/CVLAB-Unibo/d4-dbst |
| NDR | Code related to [P7], https://cvlab-unibo.github.io/neural-disparity-refinement-web/ |
| RefRec | Code related to [P6], https://cvlab-unibo.github.io/shootinglabelsweb/ |
| omeganet | Code relative to [P5], https://github.com/CVLAB-Unibo/omeganet . |
| ShootingLabels | Code related to [P4], https://cvlab-unibo.github.io/shootinglabelsweb/ |
| ATDT | Code related to [P3], https://github.com/CVLAB-Unibo/ATDT |
| SemanticMonoDepth | Code related to [P2], https://github.com/CVLAB-Unibo/Semantic-Mono-Depth |