



FILIPPO ALEOTTI

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in

PROFESSIONAL EXPERIENCE

Machine Learning Engineer

Niantic Spatial

2025 – present

London, United Kingdom

Machine Learning Engineer

Niantic Labs

2022 – 2025

London, United Kingdom

EDUCATION

PhD in Structural and Environmental Health Monitoring and Management

Alma Mater Studiorum University of Bologna

2018 – 2022

Bologna, Italy

Master degree in Computer Engineering | 110/110 cum laude

Alma Mater Studiorum University of Bologna

2015 – 2018

Bologna, Italy

Bachelor degree in Computer Engineering | 110/110 cum laude

Alma Mater Studiorum University of Bologna

2012 – 2015

Bologna, Italy

DEMOS, TUTORIALS AND TALKS

Learning and understanding single image depth estimation in the wild | *Tutorial*

Computer Vision and Pattern Recognition (CVPR)

2020

Online

Facing depth estimation in-the-wild with deep networks | *Tutorial*

European Computer Vision Conference (ECCV)

2020

Online

AWARDS

Best Paper Honorable Mention

Neural Disparity Refinement for Arbitrary Resolution Stereo

International Conference on 3D Vision (3DV)

2021

Outstanding Reviewer

International Conference on Computer Vision (ICCV)

2025

Outstanding Reviewer

Computer Vision and Pattern Recognition (CVPR)

2026

PUBLICATIONS

- [1] A. Abdelreheem, **F. Aleotti**, J. Watson, Z. Qureshi, A. Eldesokey, P. Wonka, G. Brostow, S. Vicente, and G. Garcia-Hernando, "Placeit3d: Language-guided object placement in real 3d scenes," in *International Conference on Computer Vision*, 2025.
- [2] J. Lee, **F. Aleotti**, D. Mazala, G. Garcia-Hernando, S. Vicente, O. J. Johnston, I. Kraus-Liang, J. Powierza, D. Shin, J. E. Froehlich, G. Brostow, and J. Van Brummelen, "Imaginatear: Ai-assisted in-situ authoring in augmented reality," in *ACM Symposium on User Interface Software and Technology*, 2025.
- [3] M. Sayed, **F. Aleotti**, J. Watson, Z. Qureshi, G. Garcia-Hernando, G. Brostow, S. Vicente, and M. Firman, "Doubletake: Geometry guided depth estimation," in *European Conference on Computer Vision*, 2024.
- [4] J. Watson, **F. Aleotti**, M. Sayed, Z. Qureshi, O. Mac Aodha, G. Brostow, M. Firman, and S. Vicente, "Airplanes: Accurate plane estimation via 3D-consistent embeddings," in *Conference on Computer Vision and Pattern Recognition*, 2024.

- [5] **F. Aleotti**, M. Poggi, and S. Mattoccia, "Learning optical flow from still images," in *Conference on Computer Vision and Pattern Recognition*, 2021.
- [6] **F. Aleotti**, F. Tosi, P. Zama Ramirez, M. Poggi, S. Salti, L. Di Stefano, and S. Mattoccia, "Neural disparity refinement for arbitrary resolution stereo," in *International Conference on 3D Vision*, 2021.
- [7] **F. Aleotti**, G. Zaccaroni, L. Bartolomei, M. Poggi, F. Tosi, and S. Mattoccia, "Real-time single image depth perception in the wild with handheld devices," *Sensors*, 2021.
- [8] A.-H. Livoroi, A. Conti, L. Foianesi, F. Tosi, **F. Aleotti**, M. Poggi, F. Tauro, E. Toth, S. Grimaldi, and S. Mattoccia, "On the deployment of out-of-the-box embedded devices for self-powered river surface flow velocity monitoring at the edge," *Applied Sciences*, vol. 11, no. 15, 2021.
- [9] M. Poggi, **F. Aleotti**, and S. Mattoccia, "Sensor-guided optical flow," in *International Conference on Computer Vision*, 2021.
- [10] M. Poggi, S. Kim, F. Tosi, S. Kim, **F. Aleotti**, D. Min, K. Sohn, and S. Mattoccia, "On the confidence of stereo matching in a deep-learning era: A quantitative evaluation," *Transactions on Pattern Analysis and Machine Intelligence*, 2021.
- [11] **F. Aleotti**, M. Poggi, F. Tosi, and S. Mattoccia, "Learning end-to-end scene flow by distilling single tasks knowledge," in *AAAI Conference on Artificial Intelligence*, 2020.
- [12] **F. Aleotti**, F. Tosi, P. Z. Ramirez, M. Poggi, S. Salti, L. D. Stefano, and S. Mattoccia, "Distilled semantics for comprehensive scene understanding from videos," in *Conference on Computer Vision and Pattern Recognition*, 2020.
- [13] **F. Aleotti**, F. Tosi, L. Zhang, M. Poggi, and S. Mattoccia, "Reversing the cycle: Self-supervised deep stereo through enhanced monocular distillation," in *European Conference on Computer Vision*, Springer, 2020.
- [14] V. Peluso, A. Cipolletta, A. Calimera, M. Poggi, F. Tosi, **F. Aleotti**, and S. Mattoccia, "Enabling monocular depth perception at the very edge," in *Conference on Computer Vision and Pattern Recognition Workshops*, 2020.
- [15] M. Poggi, **F. Aleotti**, F. Tosi, and S. Mattoccia, "On the uncertainty of self-supervised monocular depth estimation," in *Conference on Computer Vision and Pattern Recognition*, 2020.
- [16] M. Poggi, **F. Aleotti**, F. Tosi, and S. Mattoccia, "Self-adapting confidence estimation for stereo," in *European Conference on Computer Vision*, Springer, 2020.
- [17] M. Poggi, F. Tosi, **F. Aleotti**, and S. Mattoccia, "Leveraging a weakly adversarial paradigm for joint learning of disparity and confidence estimation," in *International Conference on Pattern Recognition*, 2020.
- [18] F. Tosi, M. Rocca, **F. Aleotti**, M. Poggi, S. Mattoccia, F. Tauro, E. Toth, and S. Grimaldi, "Enabling image-based streamflow monitoring at the edge," *Remote Sensing*, 2020.
- [19] F. Tosi, **F. Aleotti**, M. Poggi, and S. Mattoccia, "Learning monocular depth estimation infusing traditional stereo knowledge," in *Conference on Computer Vision and Pattern Recognition*, 2019.
- [20] **F. Aleotti**, F. Tosi, M. Poggi, and S. Mattoccia, "Generative adversarial networks for unsupervised monocular depth prediction," in *European Conference on Computer Vision Workshops*, 2018.
- [21] M. Poggi, **F. Aleotti**, F. Tosi, and S. Mattoccia, "Towards real-time unsupervised monocular depth estimation on cpu," in *International Conference on Intelligent Robots and Systems*, IEEE, 2018.

SKILLS

Languages: Italian, English

Programming: Python, Java, Javascript, C

Frameworks: PyTorch, TensorFlow, OpenCV