



Sergio Moreschini



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Italian



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Tampere, Finland



ETN-FPI



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Background

My background is in Information Technologies with specialization in Signal Processing. My main research as a doctoral student is related to Light Field (LF) and its representations. I want to broaden my horizons in the field of imaging and video: this motivated me to explore actual trends like machine learning and deep learning. I want to constantly improve myself both as a person and as a researcher.

Education

PhD.

DOCTORAL RESEARCHER ON COMMUNICATION AND INFORMATION TECHNOLOGIES

Tampere University (TAU), Finland - 2016-Present

Master Degree

COMMUNICATION AND INFORMATION TECHNOLOGIES

Università degli Studi Roma Tre, Italy - 2013-2016
grade 110/110 cum Laude

Bachelor Degree

ELECTRONIC ENGINEERING

Università degli Studi Roma Tre, Italy - 2008-2012
grade 90/110

Experience

#3DMediaGroup
#CIVIT

Researcher, 3D Media Group, Tampere University. Our goal is to investigate methods for capturing, processing and display 3D visual data. Related projects:

- *Capture*: rig-mounted single/multi camera capture for LF content creation^{1,2}; 360-degree cameras capture, livestream and content creation¹.
- *Analysis*: **Shearlet-based LF reconstruction of scenes with non-Lambertian properties¹**; fusion of multi-camera-based LF²; plenoptic-displaced camera LF analysis².
- *Visualization*: LF visualization for multiview display¹; 360-degree camera reproduction on head mounted devices¹.

¹ Projects developed in the Center for Immersive Visual Technologies **CIVIT** in Tampere University.

² Projects developed during the secondment period (2017) at **Christian-Albrechts-Universität zu Kiel** (DE), in collaboration with Raytrix GmbH.

#ETN-FPI

European Training Network on Full Parallax Imaging: Four year (2015-2019) H2020 Marie Skłodowska-Curie Innovative Training Network aimed at advancing the research in areas of plenoptics, light field and integral imaging.

#ERASMUS

#MasterThesis

Erasmus Project: Five months (2014) spent in Tampere University of Technology as an Erasmus Exchange student. This experience evolved in a collaboration for the master thesis (2016) titled: **Channel Resource Allocation for Multi-Camera Video Streaming in Vehicular Ad-Hoc Networks**. Published in an international conference.

Ongoing Projects

- *Capture*: Bidirectional capture for LF microscopy³.
- *Analysis*: Volumetric representation of specimens captured with LF microscopes.
- *Machine Learning*: Investigating neural networks (U-net) for LF based biomedical imaging in Tensorflow and Keras; LF Reconstruction in Pytorch.

³ Project in development in collaboration with **CBIG** group (TAU)

Publications	<ul style="list-style-type: none">• E. Belyaev, S. Moreschini, and A. Vinel, “Uncoordinated multi-user video streaming in VANETs using Skype,” IEEE 22nd Int. Work. on Comp. Aided Mod. and Des. of Comm. Links and Net. (CAMAD), pp. 1-3, June 2017.• S. Moreschini, G. Scrofani, R. Bregovic, G. Saavedra, and A. Gotchev, “Continuous Refocusing for Integral Microscopy with Fourier Plane Recording”. Euro. Signal Process. Conf, (EUSIPCO), pp. 216-220, Sept. 2018.• S. Moreschini, R. Bregovic and A. Gotchev, “Shearlet-based light field reconstruction of scenes with non-Lambertian properties”. 8-th European Workshop on Visual Information Processing, (EUVIP), Oct. 2019.• F. Gama, S. Moreschini, I. Huttu-Hiltunen, O. Suominen, R. Bregovic, and A. Gotchev, “CIVIT dataset: Stereoscopic 3D-360 videos of typical media production use cases”. ELFI workshop, 2019 (to appear).• S. Moreschini, F. Gama, R. Bregovic, and A. Gotchev, “CIVIT dataset: Horizontal-parallax-only densely-sampled light-fields”. ELFI workshop, 2019 (to appear)																								
Awards	Best poster award @ IEEE SPS Summer School 2018																								
Training	<ul style="list-style-type: none">- Training school on 3D displays and the human visual system;- Training school on optical foundations of full-parallax imaging;- Workshop on multi-camera image processing for media production;- 3D and Virtual Reality;- Advanced Image Processing (Teaching Assistant);- Computer vision: 3D scene reconstruction;- Training school on plenoptic sensing;- Signal compression;- Workshop on visual data capture;- Training school on researcher development;- Training school on LF data representation, interpretation and compression;- Workshop in Media Production.																								
Skills	<table><tr><th>Software</th><th>Theory</th><th>Languages</th></tr><tr><td>MATLAB ●●●</td><td>Plenoptic ●●●</td><td>Italian Native</td></tr><tr><td>Python ●●○</td><td>Frame Theory ●●○</td><td>English Working proficiency</td></tr><tr><td>Pytorch ●●○</td><td>Light Field ●●●</td><td>French Elementary</td></tr><tr><td>Tensorflow ●○○</td><td>Optics ●○○</td><td></td></tr><tr><td>Linux ●●○</td><td>V.C. standards ●●○</td><td></td></tr><tr><td>Blender ●○○</td><td></td><td></td></tr><tr><td>OFFICE ●●●</td><td></td><td></td></tr></table>	Software	Theory	Languages	MATLAB ●●●	Plenoptic ●●●	Italian Native	Python ●●○	Frame Theory ●●○	English Working proficiency	Pytorch ●●○	Light Field ●●●	French Elementary	Tensorflow ●○○	Optics ●○○		Linux ●●○	V.C. standards ●●○		Blender ●○○			OFFICE ●●●		
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Reference	<p>Prof. Atanas Gotchev atanas.gotchev@tuni.fi Group Leader “3D Media Group” Tampere University, Finland</p>																								
About me	<p>I am a football passionate. Playing and watching football made me used to cooperate to reach a common goal and shaped my personality. My experience in European Programs made me used to live, talk, behave in multicultural environments and increased my passion for traveling.</p>																								