

# Francesco Pittaluga

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**RESEARCH** Computer Vision, Machine Learning, Computational Photography

**EDUCATION** **University of Florida**, Gainesville, FL 2014 - 2019 (expected)  
Doctor of Philosophy in Electrical Engineering  
Advisor: Dr. Sanjeev J. Koppal

**Tufts University**, Medford, MA 2010 - 2014  
Bachelor of Science in Electrical Engineering  
Second Major: Computer Science  
Advisor: Dr. Karen Panetta

**EXPERIENCE** **University of Florida, FOCUS Lab**, Gainesville, FL Summer 2014 - Present  
*Research Assistant to Dr. Sanjeev J. Koppal*  
Design and build novel computational cameras and deep learning-based approaches for privacy preserving computer vision.

**Microsoft Research**, Seattle, WA Summer 2018  
*Research Intern under Dr. Sudipta Sinha and Dr. Sing Bing Kang*  
Developed novel deep learning-based approach to synthesize novel views by inverting SfM reconstructions and leveraged this approach to perform first systematic analysis of the privacy risks associated with storing 3D point clouds. Developed novel pipeline for privacy preserving action recognition from coded aperture videos.

**Magic Leap, Advanced Technologies Lab**, Seattle, WA Summer 2017  
*Intern under Dr. Laura Trutoiu and Dr. Brian Schowengerdt*  
Developed proprietary deep learning-based approach for fast calibration of active sensors.

**Toyota Technological Institute at Chicago (TTIC)**, Chicago, IL Fall 2016  
*Researcher under Dr. Ayan Chakrabarti*  
Developed novel approach to learn privacy preserving encodings via adversarial training.

**General Electric Intelligent Platforms**, Foxborough, MA Summer 2013  
*Software Engineer Intern*  
Developed web service and web application for monitoring big data from industrial IOT.

**Tufts University, Simulation Lab**, Medford, MA Fall 2012 - Spring 2013  
*Researcher under Dr. Karen Panetta*  
Developed facial recognition system for UAV platforms.

**Florida International University, NSF REU Program, Miami, FL**  
*Researcher under Dr. Niki Pissinou*  
Developed data cleaning algorithms for mobile sensor networks.

Summer 2012

**PUBLICATIONS**

**Revealing Scenes by Inverting Structure from Motion Reconstructions**

Under Review, 2019

F. Pittaluga, S. J. Koppal, S. B. Kang, S. Sinha

**Privacy Preserving Action Recognition using Coded Aperture Videos**

Under Review, 2019

Z. W. Wang, V. Vineet, F. Pittaluga, S. Sinha, S. B. Kang

**Learning Privacy Preserving Encodings through Adversarial Training**

Winter Conference on Applications of Computer Vision (WACV), 2019

F. Pittaluga, S. J. Koppal, and Ayan Chakrabarti

**Pre-Capture Privacy for Small Vision Sensors**

Pattern Analysis and Machine Intelligence (PAMI), 2017

F. Pittaluga and S. J. Koppal

**Sensor-level Privacy for Thermal Cameras**

International Conference on Computational Photography (ICCP), 2016

F. Pittaluga, A. Zivkovic, and S. J. Koppal

**Privacy Preserving Optics for Miniature Vision Sensors**

Computer Vision and Pattern Recognition (CVPR), 2015

F. Pittaluga and S. J. Koppal

**Facial Recognition using HVS Algorithms for Robotic and UAV Platforms**

Technologies for Practical Robot Applications (TePRA), 2013

N. Davis, F. Pittaluga, and K. Panetta

**AWARDS**

**Microsoft Research Dissertation Grant**

2018 - 2019

Awarded for work on Privacy Preserving Computational Cameras

**Research Fellowship**

2014 - 2019

University of Florida, Department of Electrical and Computer Engineering

**Eta Kappa Nu (HKN)**

2015

University of Florida, Department of Electrical and Computer Engineering

**Cum Laude**

2014

Tufts University, School of Engineering

<b>INVITED TALKS</b>	<b>Learning Privacy Preserving Encodings through Adversarial Training</b> Winter Conference on Applications of Computer Vision (Spotlight)	2019
	<b>Revealing Scenes by Inverting Structure from Motion Reconstructions</b> Microsoft Research	2018
	<b>Privacy Preserving Computational Cameras</b> Magic Leap, Advanced Technologies Lab	2018
	Microsoft Research, Ph.D. Summit (Spotlight)	2018
	CVPR Workshop: Challenges and Opportunities for Privacy and Security (Spotlight)	2017
<b>Pre-Capture Privacy for Small Vision Sensors</b>	DNDO Applications Research Initiative Conference	2016
<b>Sensor-level Privacy for Thermal Cameras</b>	International Conference on Computational Photography (ICCP)	2016
<b>EDITORIAL</b>	<b>IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)</b> , Reviewer	2019
	<b>IEEE Transactions on Dependable and Secure Computing</b> , Reviewer	2018
	<b>IEEE Transactions on Circuits and Systems for Video Technology</b> , Reviewer	2015
<b>TEACHING</b>	<b>Teaching Assistant for Communications</b> University of Florida, Department of Electrical and Computer Engineering	Spring 2018
	<b>Teaching Assistant for Computational Photography</b> University of Florida, Department of Electrical and Computer Engineering	Fall 2017
	<b>Teaching Assistant for Electronics 1</b> Tufts University, Department of Electrical and Computer Engineering	Spring 2013
<b>PATENTS</b>	<b>Pre-capture De-identification (PCDI) Imaging System and PCDI Optics Assembly</b> US Patent App. 15/577,019 S. J. Koppal and F. Pittaluga	
	<b>Optical Privatizing Device, System and Method of Use</b> U.S. Patent Application No. 15/561,251 S. J. Koppal and F. Pittaluga	
<b>OTHER</b>	<b>Citizenship:</b> U.S. <b>Languages:</b> Fluent in English and Spanish <b>Software:</b> Tensorflow, Keras, Caffe, MATLAB, Kinect, OpenCV, SolidWorks, Illustrator <b>Programming:</b> C, C++, C#, Python, Java, JavaScript, HTML, CSS, Assembly	