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 — Summer 2012
Researcher under Dr. Niki Pissinou
Developed data cleaning algorithms for mobile sensor networks.

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

INVITED TALKS

Learning Privacy Preserving Encodings through Adversarial Training 2019
Winter Conference on Applications of Computer Vision (Spotlight)

Revealing Scenes by Inverting Structure from Motion Reconstructions 2018
Microsoft Research

Privacy Preserving Computational Cameras
Magic Leap, Advanced Technologies Lab 2018
Microsoft Research, Ph.D. Summit (Spotlight) 2018
CVPR Workshop: Challenges and Opportunities for Privacy and Security (Spotlight) 2017

Pre-Capture Privacy for Small Vision Sensors 2016
DNDO Applications Research Initiative Conference

Sensor-level Privacy for Thermal Cameras 2016
International Conference on Computational Photography (ICCP)

EDITORIAL

IEEE International Conference on Computer Vision (ICCV), Reviewer 2019
IEEE Conf. on Computer Vision and Pattern Recognition (CVPR), Reviewer 2019
IEEE Transactions on Dependable and Secure Computing, Reviewer 2018
IEEE Transactions on Circuits and Systems for Video Technology, Reviewer 2015

TEACHING

Teaching Assistant for Communications Spring 2018
Teaching Assistant for Computational Photography Fall 2017
University of Florida, Department of Electrical and Computer Engineering

Teaching Assistant for Electronics 1 Spring 2013
Tufts University, Department of Electrical and Computer Engineering

PATENTS

Pre-capture De-identification (PCDI) Imaging System and PCDI Optics Assembly
US Patent App. 15/577,019
S. J. Koppal and F. Pittaluga

Optical Privatizing Device, System and Method of Use
U.S. Patent Application No. 15/561,251
S. J. Koppal and F. Pittaluga

OTHER

Citizenship: U.S.
Languages: Fluent in English and Spanish
Software: Tensorflow, Keras, Caffe, MATLAB, Kinect, OpenCV, SolidWorks, Illustrator
Programming: C, C++, C#, Python, Java, JavaScript, HTML, CSS, Assembly