

# **IS&T International Symposium on Electronic Imaging Science and Technology 2017**

Surveillance: Applications and Algorithms

Burlingame, California, USA  
29 January – 2 February 2017

**Editors:**

**Sreenath Rao Vantaram**

ISBN: 978-1-5108-4627-2

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2017) by Society for Imaging Science & Technology  
All rights reserved.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact Society for Imaging Science & Technology  
at the address below.

Society for Imaging Science & Technology  
7003 Kilworth Lane  
Springfield, Virginia 22151  
USA

Phone: 703-642-9090  
Fax: 703-642-9094

[info@imaging.org](mailto:info@imaging.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## Surveillance: Applications and Algorithms

### Symposium Chairs

Nitin Sampat, Rochester Institute of Technology (United States)  
Joyce Farrell, Stanford University (United States)

### Symposium Short Course Chairs

Mohamed-Chaker Larabi, University of Poitiers (France)  
Jonathan B. Phillips, Google, Inc. (United States)

### At-large Conference Chair Representative

Adnan Alattar, Digimarc (United States)

### Past Symposium Chair

Choon-Woo Kim, Inha University (Republic of Korea)

### Chair

Sreenath Rao Vantaram, Intel Corporation (United States)

## Monday January 30, 2017

---

### Surveillance: Applications and Algorithms Topics

---

Session Chair: Sreenath Vantaram, Intel Corporation (United States)

#### 8:50 – 10:20 AM

##### Harbour

8:50

*Chair Opening Remarks*

9:00

#### **Traffic light recognition and dangerous driving events**

**detection from surveillance video of vehicle camera**, Haike Guan, Ryohsuke Kasahara, and Tomoaki Yano, Ricoh Company, Ltd. (Japan) [SRV-349]

3

9:20

#### **A combined HOG and deep convolution network cascade for pedestrian detection**

*Yuriy Lipetski and Oliver Sidla, SLR Engineering GmbH (Austria) [SRV-350]*

11

9:40

#### **A multi-scale approach to skin pixel detection**

*Siddharth Roheda<sup>1</sup> and Hari Kalva<sup>2</sup>; <sup>1</sup>North Carolina State University and <sup>2</sup>Florida Atlantic University (United States) [SRV-352]*

18

10:00

#### **Detecting and estimating sound events locations through a microphone array**

*Josafat Martínez-García, Beatriz Juárez-Arreortúa, Alberto Vázquez-Cervantes, and Hugo Jimenez, Centro de Ingeniería y Desarrollo Industrial (Mexico) [SRV-351]*

10:00 AM – 7:30 PM Industry Exhibition

10:20 – 10:50 AM Coffee Break

---

### EI 2017 Tuesday Plenary and Symposium Awards

---

Session Chairs: Joyce E. Farrell, Stanford University, and Nitin Sampat, Rochester Institute of Technology (United States)

#### 2:00 – 3:00 PM

##### Grand Peninsula Ballroom D

*VR 2.0: Making virtual reality better than reality*, Gordon Wetzstein, Stanford University (United States)

Gordon Wetzstein is an Assistant Professor of Electrical Engineering and, by courtesy, of Computer Science, at Stanford University, and leads the Stanford Computational Imaging Group. He received a PhD in computer science from the University of British Columbia (2011) where his doctoral dissertation focused on computational light modulation for image acquisition and display. In his talk, Wetzstein explores the frontiers of VR systems engineering. Eventually, VR/AR systems will redefine communication, entertainment, education, collaborative work, simulation, training, telesurgery, and basic vision research, as next-generation computational near-eye displays evolve to deliver visual experiences that are better than the real world.

3:00 – 3:30 PM Coffee Break

5:30 – 7:30 PM Symposium Demonstration Session, Grand Peninsula Ballroom E