Michał Koperski

PhD Student at INRIA

2004, route des Lucioles - BP 93, 06902, Sophia Antipolis Cedex, France

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Education

INRIA, University of Nice Sophia Antipolis

Sophia Antipolis, France

PhD in Computer Science (Computer Vision)

Jan. 2014 - exp. Nov. 2017

- Title: "Human Action Recognition in Videos with Local Representation",
- Advisor: Francois Bremond, INRIA,
- Reviewer: Matthieu Cord, University Pierre Marie Currie,
- Reviewer: Leonid Sigal, University of British Columbia,
- Examinator: Jean-Marc Odobez, IDIAP,
- President: Federic Precioso, University of Nice Sophia Antipolis.

Poznan University of Technology

Poznan, Poland

M.Sc. in Computer Science and Engineering

Feb. 2007 - Aug. 2009

Poznan University of Technology

Poznan, Poland

B.S. in Computer Science and Engineering

Oct. 2004 - Feb. 2007

Experience

INRIA

Sophia Antipolis, France

PhD Student

Feb. 2014 - PRESENT

- Proposed, implemented and validated several methods for action recognition (multimodal RBG+D desriptor, Brownian Covariance, Spatio-Temporal layout for CNN and Fisher Vector representation) and action detection (Real time Fisher Vector representation),
- Published 9 scientific papers [1, 3, 5, 4, 6, 7, 8, 9, 10] and [11]
- The code of the proposed methods was successfully transferred to Toyota.

Disney Research

Pittsburgh, PA, USA

Research Intern

Jan. 2016 - Apr. 2016

- Supervisors: Peter Carr, Slawomir Bak,
- Proposed cross-view Fisher Vector representation for People Re-Identification,
- Published 1 scientific paper [2] ,
- 1 patent request was filed.

INRIA

Sophia Antipolis, France

Research Intern

Apr. 2013 - Sep. 2013

- Supervisor: Francois Bremond,
- Proposed multimodal RGB-D descriptor for action recognition,
- Published 1 scientific paper [10].

Wroclaw University of Technology

Wroclaw, Poland

Teaching Assistant

Apr. 2012 - Mar. 2013

- Teaching "Algorithms and Data Structures"
- Teaching "Operating Systems"

Poznan University of Technology

Poznan, Poland

Research Engineer

Jan. 2010 - Apr. 2012

- BirdWatch project at Intelligent Decision Support System Laboratory,
- Implemented and validated bird species detection system for mobile devices (ARM),
- Teaching "Software Engineering"
- Published 1 book chapter [12].

Skills

Programming Python, Matlab, Java, C/C++

Frameworks PyTroch, Scikit-Learn, Numpy, Pandas, Caffe, MatConvNet

Languages English (Fluent), French (Intermediate), Russian (Intermediate), German (Beginner), Polish (Native)

Mentoring

Master Students

2017 **Srijan Das**, co-advised by F. Bremond, Pose based CNN for Action Recognition [3] *INRIA*

2017 **Killian Barrere**, co-advised by F. Bremond, CNN training with limited amount of data *INRIA*

Professional activities

Referee and Reviewer

- IEEE Transactions on Multimedia
- British Machine Vision Conference

Projects

- Action dection framework for Toyota Partner Robot system
- BirdWatch – system for automatic bird species detection

Teaching

- Algorithms and Data Structures
- Operating Systems
- Software Engineering

Publications

Journal Articles

[1] Carlos Crispim-Junior, Alvaro Gomez Uria, Carola Strumia, Michal Koperski, Alexandra König, Farhood Negin, Serhan Cosar, Anh Tuan Nghiem, Duc Phu Chau, Guillaume Charpiat, and Francois Bremond, "Online Recognition of Daily Activities by Color-Depth Sensing and Knowledge Models"
Sensors vol. 17 (June 2017) p. 1528. 2017

Conference Proceedings

[2] Michal Koperski, Slawomir Bak, and Peter Carr, "Groups Re-identification with Temporal Context"
The ACM on International Conference on Multimedia Retrieval (ICMR), 2017

[3] Das Srijan, Michal Koperski, Francois Bremond, and Gianpiero Francesca, "Action Recognition based on a mixture of RGB and Depth based skeleton"
The 14th IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS), 2017

[4] Carlos Fernando Crispim-Junior, Michal Koperski, Serhan Cosar, and Francois Bremond, "Semi-supervised understanding of complex activities from temporal concepts"
The 13th IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS), 2016

[5] Michal Koperski and Francois Bremond, "Modeling Spatial Layout of Features for Real World Scenario RGB-D Action Recognition"
The 13th IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS), 2016

[6] Farhood F Negin, Serhan Cosar, Michal F Koperski, Carlos F Crispim-Junior, Konstantinos Avgerinakis, and Francois F Bremond, "A hybrid framework for online recognition of activities of daily living in real-world settings"
The 13th IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS), 2016

[7] F. Negin, S. Cogar, F. Bremond, and M. Koperski, "Generating unsupervised models for online long-term daily living activity recognition"
3rd IAPR Asian Conference on Pattern Recognition (ACPR), 2015

[8] Javier Ortiz, Slawomir Bak, Michal Koperski, and François Brémond, "Minimizing hallucination in Histogram of Oriented Gradients"
The 12th IEEE International Conference on Advanced Video and Signal-based (AVSS), 2015

[9] Piotr Bilinski, Michal Koperski, Slawomir Bak, and Francois Bremond, "Representing Visual Appearance by Video Brownian Covariance Descriptor for Human Action Recognition"
The 11th IEEE International Conference on Advanced Video and Signal-based (AVSS), 2014

[10] M. Koperski, P. Bilinski, and F. Bremond, "3D trajectories for action recognition"
The 21st IEEE International Conference on Image Processing (ICIP), 2014

PhD thesis

[11] Michal Koperski. "Human Action Recognition in Videos with Local Representation". PhD thesis.
INRIA, University of Nice Sophia-Antipolis, Nov. 2017

Book Chapters

[12] Jacek Jelonek Lukasz Kirchner Michal Koperski, *Distributed standalone mobile data providers for BirdWatch system*
NAKOM. 2011, ISBN: 978-83-89529-82-4