

# EDGAR SIMO-SERRA

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## RESEARCH INTERESTS

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Deep Networks and Conditional Random Fields and their applications to large-scale tasks in Computer Vision, Medical Imaging, and other real world problems.

## EDUCATION

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PERIOD	2011 – 2015
DEGREE	PhD in in Automatic Control, Robotics and Vision ( <i>Cum Laude</i> )
UNIVERSITY	BarcelonaTech (UPC) <span style="float: right;">Barcelona, Spain</span>
THESIS TITLE	Understanding Human-Centric Images: From Geometry to Fashion
ADVISORS	Francesc Moreno-Noguer and Carme Torras Genís

  

PERIOD	2005 – 2011
DEGREE	Superior Industrial Engineering
UNIVERSITY	BarcelonaTech (UPC) <span style="float: right;">Barcelona, Spain</span>
THESIS TITLE	Kinematic Model of the Hand using Computer Vision
ADVISORS	Francesc Moreno-Noguer and Alba Perez-Gracia

## EXPERIENCE

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PERIOD	Aug 2015 – <i>Current</i>
EMPLOYER	Waseda University <span style="float: right;">Tokyo, Japan</span>
JOB TITLE	Research Assistant

Member of the Ishikawa Laboratory at Waseda University.

PERIOD	Sep 2011 – Jul 2015
EMPLOYER	Institute of Industrial Robotics <span style="float: right;">Barcelona, Spain</span>
JOB TITLE	PhD Student (FPI Grant)

The Institut de Robòtica i Informàtica Industrial (IRI) is a Joint Research Center of the Technical University of Catalonia (UPC) and the Spanish Council for Scientific Research (CSIC).

PERIOD	Jun 2008 – Sep 2011
EMPLOYER	Institute of Industrial Robotics <span style="float: right;">Barcelona, Spain</span>
JOB TITLE	Collaborator

Member of the Humanoid Lab Project. The project is mainly addressed to students interested in learning basic concepts of robotics.

PERIOD	May 2010 – Sep 2010
EMPLOYER	Google <span style="float: right;">Google Summer of Code 2010</span>
JOB TITLE	Contract Worker

Contract worker for Google in their Summer of Code program. Project was the implementation of a 3D visualizer for interplanetary trajectories for the European Space Agency Advanced Concepts Team (ESA-ACT).

PERIOD	May 2009 — Sep 2009	
EMPLOYER	Google	Google Summer of Code 2009
JOB TITLE	Contract Worker	

Contract worker for Google in their Summer of Code program. Project was the implementation of an automated testing suite for the open source project Simple Directmedia Layer (SDL).

PERIOD	Oct 2008 — Dec 2008	
EMPLOYER	Catalan Government (Generalitat)	Barcelona, Spain
JOB TITLE	Scholarship	

Scholarship for the implementation of an Open Source firmware for a modified version of the MR-C3024 servo control board by Hitec developed at the Institute of Industrial Robotics (IRI).

PERIOD	May 2008 — Sep 2008	
EMPLOYER	Google	Google Summer of Code 2008
JOB TITLE	Contract Worker	

Contract worker for Google in their Summer of Code program. Project was the implementation of force feedback (haptic) support for the open source project Simple Directmedia Layer (SDL).

## RESEARCH STAYS

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PERIOD	Mar 2015 — Jul 2015	
LOCATION	Nakamura Lab, University of Tokyo	
SUPERVISOR	Prof. Yoshihiko Nakamura	

PERIOD	Apr 2014 — Aug 2014	
LOCATION	University of Toronto	
SUPERVISOR	Dr. Raquel Urtasun	

PERIOD	Jun 2013 — Aug 2013	
LOCATION	Toyota Institute of Technology at Chicago (TTIC)	
SUPERVISOR	Dr. Raquel Urtasun	

## SEMINARS AND INVITED TALKS

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*A Brief Introduction to Deep Networks.* Nakamura Lab, University of Tokyo. June 2015.

*Understanding Human-Centric Images through Machine Learning.* Nakamura Lab, University of Tokyo. April 2015.

*Understanding Humans from Still Images: From Geometry to Fashion.* Ishikawa Lab, Waseda University. January 2015.

*Towards Understanding Human-Centric Images.* OMRON Corporation, Kyoto. January 2015.

*3D Human Pose Estimation from Single Images.* Adaptive Systems Laboratory, Waterloo University. June 2014.

*Perception of Nonrigid Shapes under Uncertainty.* Institute of Industrial Robotics, Barcelona. April 2014.

*3D Human Pose Estimation from Single Images.* Nakamura Lab, University of Tokyo. March 2014.

*3D Human Pose Estimation from Single Images.* Sato Laboratory, University of Tokyo. March 2014.

*A Joint Model for 2D and 3D Pose Estimation from a Single Image.* Institute of Industrial Robotics, Barcelona. June 2013.

*Kinematic Synthesis of Multi-fingered Robotic Hands for Finite and Infinitesimal Tasks.* Institute of Industrial Robotics, Barcelona. May 2012.

*Kinematic Model of the Hand using Computer Vision.* Institute of Industrial Robotics, Barcelona. May 2011.

## AWARDS

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Best paper award at the International Conference on Machine Vision Applications (MVA) 2015.

## SELECTED PUBLICATIONS

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This is a careful selection of the top three publications.

E. Simo-Serra, S. Fidler, F. Moreno-Noguer, and R. Urtasun.  
*Neuroaesthetics in Fashion: Modeling the Perception of Fashionability.*  
Conference in Computer Vision and Pattern Recognition (CVPR), 2015.  
Acceptance rate 28%

E. Simo-Serra, A. Quattoni, C. Torras, and F. Moreno-Noguer.  
*A Joint Model for 2D and 3D Pose Estimation from a Single Image.*  
Conference in Computer Vision and Pattern Recognition (CVPR), 2013.  
Acceptance rate 26%

E. Simo-Serra, A. Ramisa, G. Alenyà, C. Torras, and F. Moreno-Noguer.  
*Single Image 3D Human Pose Estimation from Noisy Observations.*  
Conference in Computer Vision and Pattern Recognition (CVPR), 2012.  
Acceptance rate 24%

## PUBLICATIONS

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- 2015 E. Simo Serra.  
*Understanding Human-Centric Images: From Geometry to Fashion.*  
Thesis, PhD . BarcelonaTech (UPC), 2015.
- E. Simo-Serra, S. Fidler, F. Moreno-Noguer, and R. Urtasun.  
*Neuroaesthetics in Fashion: Modeling the Perception of Fashionability.*  
Conference in Computer Vision and Pattern Recognition (CVPR), 2015.
- A. Rubio, M. Villamizar, L. Ferraz, A. Peñate-Sánchez, A. Ramisa, E. Simo-Serra,  
A. Sanfeliu, and F. Moreno-Noguer..  
*Efficient Pose Estimation for Complex 3D Models.*  
International Conference in Robotics and Automation (ICRA), 2015.
- E. Simo-Serra, C. Torras, and F. Moreno-Noguer.  
*Lie Algebra-Based Kinematic Prior for 3D Human Pose Tracking.*  
International Conference on Machine Vision Applications (MVA), 2015.
- E. Simo-Serra, C. Torras and F. Moreno-Noguer.  
*DaLI: Deformation and Light Invariant Descriptor.*  
International Journal of Computer Vision (IJCV), 2015.
- 2014 E. Simo-Serra, S. Fidler, F. Moreno-Noguer, and R. Urtasun.  
*A High Performance CRF Model for Clothes Parsing.*  
Asian Conference on Computer Vision (ACCV), 2014.
- E. Simo-Serra, C. Torras, and F. Moreno-Noguer.  
*Geodesic Finite Mixture Models.*  
British Machine Vision Conference (BMVC), 2014.

- E. Simo-Serra, and A. Perez-Gracia.  
*Kinematic Synthesis of Tree Topologies.*  
 Mechanism and Machine Theory (MAMT), 2014.
- 2013 E. Simo-Serra, A. Quattoni, C. Torras, and F. Moreno-Noguer.  
*A Joint Model for 2D and 3D Pose Estimation from a Single Image.*  
 Conference in Computer Vision and Pattern Recognition (CVPR), 2013.
- 2012 E. Simo-Serra, A. Perez-Gracia, H. Moon, and N. Robson.  
*Design of Multi-fingered Robotic Hands for Finite and Infinitesimal Tasks using Kinematic Synthesis.*  
 Advances in Robot Kinematics (ARK), 2012.
- E. Simo-Serra, A. Ramisa, G. Alenyà, C. Torras, and F. Moreno-Noguer.  
*Single Image 3D Human Pose Estimation from Noisy Observations.*  
 Conference in Computer Vision and Pattern Recognition (CVPR), 2012.
- 2011 E. Simó Serra.  
*Kinematic Model of the Hand using Computer Vision.*  
 Thesis, Degree . BarcelonaTech (UPC), April 2011.
- E. Simo-Serra, F. Moreno-Noguer, and A. Perez-Gracia.  
*Design of Non-Anthropomorphic Robotic Hands for Anthropomorphic Tasks.*  
 ASME International Design Engineering Technical Conferences (IDETC), 2011.

## REVIEWING

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### Journal Reviewer

IEEE Computer Vision and Image Understanding (CVIU).  
 IEEE Transactions on Image Processing.  
 Computers.

### Conference Reviewer

International Conference on Computer Vision (ICCV) 2015.  
 International Conference of the Catalan Association for Artificial Intelligence (CCIA) 2015.  
 IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2014.  
 IEEE International Conference on Robotics and Automation (ICRA) 2014.  
 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2013.  
 IEEE International Conference on Advanced Video and Signal-Based Surveillance (AVSS) 2013.  
 IEEE 2nd Workshop on Consumer Depth Cameras for Computer Vision (CDC4CV) at ECCV 2012.

## WORKSHOPS AND MISC. EDUCATION

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- 2015 **Programming and Tuning Massively Parallel Systems Summer School**  
 Organized by Barcelona Supercomputing Center (BSC), University of Illinois, BarcelonaTech (UPC), HiPEAC Network of Excellence, and PRACE Advanced Training Center Program
- 2011 **Programming and Tuning Massively Parallel Systems Summer School**  
 Organized by Barcelona Supercomputing Center (BSC), University of Illinois, BarcelonaTech (UPC) and HiPEAC Network of Excellence
- 2011 **Stanford Online Courses**  
 Probabilistic Graphical Models  
 Introduction to Artificial Intelligence  
 Machine Learning

## LANGUAGES

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**ENGLISH** Native (mother tongue)  
**SPANISH** Native  
**CATALAN** Native  
**JAPANESE** JLPT N1

## SKILLS

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**COMPUTER LANGUAGES** C, matlab, Lua, python, bash  
**TOOLS** Linux, Caffe, Torch7, VIM, GIT, . . .  
**GITHUB** github.com/bobbens

## REFERENCES

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### **Prof. Raquel Urtasun**

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