

Grégory ROGEZ

THOTH team
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Research Scientist
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Education

- **Universidad de Zaragoza** **Zaragoza, Spain**
Ph.D. with highest honors, Computer Vision *June 2012*
 - Thesis: ‘Advances in exemplar-based monocular human body pose analysis: modeling, detection and tracking’ - Advisor: Prof. Carlos Orrite
- **Universidad de Zaragoza** **Zaragoza, Spain**
D.E.A. (M.Sc.), Biomedical Engineering *2004 – 2005*
 - Graduated with a 92% average, relevant courses: biomechanics, advanced signal and image processing, biomedical visualization, biometrics, neural networks, 3D vision.
- **Centrale Marseille (ENSPM)** **Marseille, France**
M.Eng. Engineering Physics *1996 – 2002*
 - Graduated with a major in information processing and telecommunications engineering.
 - M.Eng. project advisor: Prof. Antonis Argyros, ICS-FORTH, Greece

Experience

- **Inria** **Grenoble, France**
Researcher (CDD Scientifique) *July 2016 – present*
 - Starting research position. Topics: human detection, 2D/3D pose estimation, data synthesis, data augmentation, activity recognition, tracking.

Marie Curie Fellow *July 2015 – June 2016*
 - Return phase of EU project EgoVision4Health. Advisor: Dr Cordelia Schmid.
- **Univ. of California, Irvine** **Irvine, USA**
Marie Curie Fellow - Visiting Project Scientist *July 2013 – June 2015*
 - Outgoing phase of EU project EgoVision4Health. Topics: egocentric computer vision, pose estimation, object manipulation. Advisors: Profs J. M. M. Montiel and D. Ramanan.
- **Oxford Brookes University** **Oxford, UK**
Research Fellow *July 2009 – Oct. 2010*
 - Development of a real-time motion capture demonstrator, co-supervision of PhD students, grant writing (UK, EU). Supervisor: Prof. Philip H. S. Torr.
- **Universidad de Zaragoza** **Zaragoza, Spain**
Researcher *March 2011 – May 2012*
 - Topics: human pose tracking, action recognition, video-surveillance. Advisor: Carlos Orrite.

Research Assistant *May 2004 – June 2009*
 - Research, supervision of M.Sc. students, grant proposal writing (Spain, UK and EU).
 - Topics: video-surveillance, human motion analysis, biometrics, emotion recognition.

Software Engineer

Oct. 2002 – Apr. 2004

- Design and implementation in C/C++ of video-surveillance algorithms (motion detection, left-luggage detection, tracking, fall detection).
- Design, prototyping and development of vision-based OCR applications, including a license plate recognition system commercialized by DeInta (www.deinta.com/pdf/cap.pdf)

• **GEMS-General Electric Medical Systems**

Buc, France

Engineering Physics Intern

June 2001 – Dec. 2001

- Design & validation of image quality tests (contrast, noise) for X-ray vascular imaging system.

Academic Visits

• **University of California**

Irvine, USA

Computational Vision Group (with Prof. Deva Ramanan)

July 2013 – June 2015

- Visiting Project Scientist working on the EU project: Assessing Activities of Daily Living from a Wearable RGB-D Camera for In-Home Health Care Applications.

• **Oxford Brookes University**

Oxford, UK

Computer Vision Group (with Prof. Philip H. S. Torr)

2007 – 2009

- Jan. - June 2009: Co-supervision of PhD students, grant proposal writing.
- May - July 2008: Implementation in C++ of existing Matlab code, grant proposal writing.
- July - Dec. 2007: Research of a human pose detector (published at CVPR).

• **CVC - Computer Vision Center**

Barcelona, Spain

ISE Lab (with Prof. Jordi Gonzalez)

June – Sept., 2006

- Development of a human pose tracker based on Particle Filtering (oral at ICCV Workshop).

• **FORTH-ICS - Dept of Computer Science**

Hiraklio, Greece

CVRL Laboratory (with Prof. Antonis Argyros)

March – Sept. 2002

- M.Eng. Project: design and implementation in C/C++ of a planar feature detector for stereoscopic vision system. Key words: KLT feature tracker, corner matching.

Awards, Grants & Honours

Amazon Academic Research Awards (AARA) (\$80,000)	Jan. 2018
CVPR 2017 Outstanding Reviewer Award	July 2017
Amazon Academic Research Awards (AARA) (\$80,000)	Jan. 2017
Marie Curie IOF Fellowship (€ 265,000)	July 2013 – June 2016
IPAM UCLA Grant (\$1,000)	July 2013
AERFAI Best PhD thesis Award (€ 800)	June 2013
JRC (cat.30) 3-year postdoc grant (declined)	Dec. 2012
“European Doctorate” PhD honorific mention	June 2012
HEIF (Higher Education Innovation Funding) Proof of Concept Fund (£50,000)	July 2009 – Oct. 2010
HEIF Visiting Fellow Grant (£5,000)	May 2008 – July 2008
Spanish Predoctoral Fellowship (FPU) (€ 17,600 per year)	May 2004 – April 2008
Nord-PdC Regional Council Award for M.Eng. project (€ 600)	Oct. 2002
Leonardo Da Vinci Scholarship (€ 3,000)	March 2002 – Sept. 2002
French Undergraduate Scholarship (€ 4,000 per year)	1996 – 2002

Refereed Journal Articles

1. **G. Rogez** and C. Schmid. Image-Based Synthesis for Deep 3D Human Pose Estimation. To appear in *International Journal of Computer Vision (IJCV)*, 2018.
2. J. S. Supancic III, **G. Rogez**, Y. Yang, J. Shotton and D. Ramanan. Depth-based Hand Pose Estimation: Methods, Data, and Challenges. To appear in *International Journal of Computer Vision (IJCV)*, 2018.
3. **G. Rogez**, C. Orrite, J.J. Guerrero and P. H. S. Torr. Exploiting projective geometry for view-invariant monocular human motion analysis in man-made environments . *Computer Vision and Image Understanding (CVIU)*, Vol 120, pp 126-140, March 2014. **8 citations.**
4. **G. Rogez**, J. Rihan, J.J. Guerrero and C. Orrite. Monocular 3-D Gait Tracking in Surveillance Scenes. *IEEE Trans. on Cybernetics*, Vol 44(6), pp 894-909, 2014. **14 citations.**
5. **G. Rogez**, J. Rihan, C. Orrite and P. H. S. Torr. Fast Human Pose Detection using Randomized Hierarchical Cascades of Rejectors. *International Journal of Computer Vision (IJCV)*, Vol 99(1), pp 2926-2944, Aug 2012. **22 citations.**
6. **G. Rogez**, C. Orrite and J. Martínez. A Spatio-Temporal 2D-Models Framework for Human Pose Recovery in Monocular Sequences. *Pattern Recognition*, Vol 41(9), Sept 2008. **44 citations.**

Top Refereed International Conference (CVPR / ICCV / NIPS / BMVC)

7. N. Chesneau, **G. Rogez**, K. Alahari and C. Schmid, Detecting Parts for Action Localization. In *British Machine Vision Conference (BMVC)*, 2017. **Acceptance Rate: 30%.**
8. **G. Rogez**, P. Weinzaepfel and C. Schmid, LCR-Net: Localization-Classification-Regression for Human Pose. In *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2017. **(spotlight) Acceptance Rate: 7%. 16 citations.**
9. **G. Rogez** and C. Schmid, MoCap-guided Data Augmentation for 3D Pose Estimation in the Wild. In *Neural Information Processing Systems (NIPS)*, 2016. **Accept. Rate: 22.7%. 54 citations.**
10. **G. Rogez**, J. S. Supancic III and D. Ramanan, Understanding Everyday Hands in Action from RGB-D Images. In *IEEE International Conf. on Computer Vision (ICCV)*, 2015. **34 citations.**
11. J. S. Supancic III, **G. Rogez**, Y. Yang, J. Shotton and D. Ramanan. Depth-based Hand Pose Estimation: Methods, Data, and Challenges. In *IEEE International Conf. on Computer Vision (ICCV)*, 2015. **77 citations.**
12. **G. Rogez**, J. S. Supancic III and D. Ramanan. First-Person Pose Recognition using Egocentric Workspaces. In *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2015. **37 citations.**
13. **G. Rogez**, J. Rihan, S. Ramalingam, C. Orrite and P.H.S. Torr. Randomized Trees for Human Pose Detection. In *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2008. **147 citations.**
14. **G. Rogez**, J. Guerrero, J. Martínez and C. Orrite. Viewpoint independent human motion analysis in man-made environments. In *British Machine Vision Conference (BMVC)*, 2006. **25 citations.**

Other Refereed International Conference (with Proceedings)

15. **G. Rogez**, M. Khademi, J. S. Supancic III, J.M.M. Montiel and D. Ramanan. 3D Hand Pose Detection in Egocentric RGB-D Images. In *IEEE Workshop on Consumer Depth Cameras for Computer Vision (CDC4CV)* in conj. with ECCV 2014. **(Oral) 51 citations.**
16. C. Orrite, M. Rodríguez, E. Herrero, **G. Rogez** and S. Velastin. Automatic Segmentation and Recognition of Human Actions in Monocular Sequences. In *International Conference on Pattern Recognition (ICPR)* , 2014. **6 citations.**
17. C. Orrite, A. Gañán and **G. Rogez**. HOG-Based Decision Tree for Facial Expression Classification. In *Iberian Conf. on Pattern Recognition and Image Analysis (IbPRIA)*, 2009. **(Oral) 30 citations.**
18. C. H. Ek, J. Rihan, P. H. S. Torr, **G. Rogez**, N. Lawrence. Ambiguity Modeling in Latent Spaces. In *Workshop on Machine Learning and Multimodal Interaction (MLMI)*, 2008. **63 citations.**
19. **G. Rogez**, I. Rius, J. Martínez and C. Orrite. Exploiting Spatio-Temporal Constraints for Robust 2D Pose Tracking. In *2nd Workshop on Human Motion - Understanding, Modeling, Capture and Animation*, in conj. with ICCV 2007. **(Oral - Acceptance Rate: 26%)**
20. **G. Rogez**, J.J. Guerrero and C. Orrite. View-invariant Human Feature Extraction for Video-surveillance Applications. In *IEEE Conf. on Advanced Video and Signal-based Surv. (AVSS)*, 2007. **12 citations.**
21. **G. Rogez**, J. Martínez and C. Orrite. Dealing with Non-linearity in Shape Modelling of Articulated Objects. In *Iberian Conf. on Pattern Recog. and Image Analysis (IbPRIA)*, 2007.
22. J. Martínez, C. Orrite and **G. Rogez**. Rao-Blackwellized Particle Filter for Human Appearance and Position Tracking. In *Iberian Conf. on Pattern Recog. and Image Analysis (IbPRIA)*, 2007.
23. **G. Rogez**, C. Orrite, J. Martínez and J.E. Herrero. Probabilistic Spatio-Temporal 2D-Model for Pedestrian Motion Analysis in Monocular Sequences. In *International Conf. on Articulated Motion and Deformable Objects (AMDO)*, 2006. **10 citations.**
24. **G. Rogez**, C. Orrite and J. Martínez. Human Figure Segmentation Using Independent Component Analysis. In *Iberian Conference on Pattern Recognition and Image Analysis (IbPRIA)*, 2005.
25. C. Orrite, J. Martínez, J.E. Herrero and **G. Rogez**. 2D Silhouette and 3D Skeletal Models for Human Detection and Tracking. In *International Conference on Pattern Recognition (ICPR)*, 2004. **39 citations.**

International public press

26. **G. Rogez**, D. Ramanan, J.M.M. Montiel. Egovision4Health- Assessing Activities of Daily Living from a Wearable RGB-D Camera for In-Home Health Care Applications. *ERCIM News*, 2013(95).

Refereed International Workshops (without Proceedings)

27. P. Nguyen, **G. Rogez**, C. Fowlkes and D. Ramanan, The Open World of Micro-Videos. *4th International Workshop on Large Scale Visual Recognition and Retrieval: BigVision* in conj. with *IEEE CVPR 2016*, Las Vegas, 2016.
28. **G. Rogez**, M. Khademi, J. S. Supancic III, J.M.M. Montiel and D. Ramanan, 3D Hand Pose Detection in Egocentric RGB-D Images. *IEEE Workshop on Egocentric Vision* in conj. with *IEEE CVPR 2014*, Columbus, 2014

29. **G. Rogez** and C. Orrite. Constraint-based Search Through Spatio-Temporal 2D-Models Framework. *Workshop on Learning, Representation and Context for Human Sensing in Video* in conjunction with *IEEE CVPR 2006*, New York, 2006.

Technical Reports

30. **G. Rogez**, P. Weinzaepfel and C. Schmid, LCR-Net++: Multi-person 2D and 3D Pose Detection in Natural Images. *arXiv preprint*, arXiv:1803.00455, 2018. Submitted to IEEE Trans. PAMI.
31. P. Nguyen, **G. Rogez**, C. Fowlkes and D. Ramanan, The Open World of Micro-Videos. *arXiv preprint*, arXiv:1603.09439, 2016. **8 citations.**
32. **G. Rogez** and C. Schmid, MoCap-guided Data Augmentation for 3D Pose Estimation in the Wild. *arXiv preprint*, arXiv:1607.02046, 2016
33. J. S. Supancic III, **G. Rogez**, Y. Yang, J. Shotton and D. Ramanan. Depth-based Hand Pose Estimation: Methods, Data, and Challenges. *arXiv preprint*, arXiv:1504.06378, 2015
34. **G. Rogez**, J. S. Supancic III and D. Ramanan. Egocentric Pose Recognition in Four Lines of Code. *arXiv preprint*, arXiv:1412.0060, 2014
35. **G. Rogez**, M. Khademi, J. S. Supancic III, J.M.M. Montiel and D. Ramanan, 3D Hand Pose Detection in Egocentric RGB-D Images. *arXiv preprint*, arXiv:1412.0065, 2014

Participation in Funded Projects

European and National Research Projects

- “ALLEGRO - Active Large-scale Learning for Visual Recognition” (ERC-2012-ADG-320559)
- “EGOVISION4HEALTH - Assessing Activities of Daily Living from a Wearable RGB-D Camera for In-Home Health Care Applications” (PIOF-GA-2012-328288)
- “Human Tracking and Trajectory Analysis for Social Behavior Understanding” (TIN2010-20177)
- “MONAMI - Mainstreaming on Ambient Intelligence” (IST-5-0535147)
- “HARMRES - Human Activity Recognition and Modelling in Real Scenarios” (TIN-2006-11044)
- “Human detection, tracking and authentication by facial biometrics and gait” (TIC2003-08382-C05-05)
- “IEYE - OBJECT TRACKING Development of a third generation video surveillance system for monitoring of intelligent environments” (PROFIT/IBK 02-263)
- “DGAGE System of third generation for access control and security by advanced computer vision techniques” (DGA GE DGA2002)

R&D Contracts with Companies or Private Funding Entities

- “3DHumansInAction: 3D Understanding of Humans in Action from Real-World Videos.”, Amazon AARA gift 2018.
- “3DPose4Action: 3D Human Action Recognition from Monocular RGB Videos.”, Amazon AARA gift 2017.
- “CIPGAL Learning system for parking control with a license plate recognition OCR, damage inspection in cars, and managing the number of available slots” (CIT-390000-2005-18)
- “PLATE Automatic plate recognition in an access-control car park” (OTRI 2003/0240)
- “Traceability of Spanish Ham using Computer Vision Techniques” (OTRI 2001/0479)

Presentations and Seminars

- “3D human pose detection: deep architectures and training data”, invited speaker at journée CNRS GDR-ISIS on Visage, geste, action et comportement, Paris, December 2017.
- “Monocular 3D Human Pose Estimation: classification approaches and training data”, LIRMM workshop , Montpellier, December 2016 ◊ INRIA, Grenoble, December 2016.
- “Understanding Everyday Hands in Action From a Wearable RGB-D Sensor”, CVPR Tutorial on First-person Visual Sensing: Theory, Models, and Application, June 2016.
- “Understanding Everyday Hands in Action From a Wearable RGB-D Sensor”, journée CNRS GDR-ISIS Robotics, Paris, May 2016.
- “3D Hand Pose Detection in Egocentric RGB-D images”, ECCV Workshop on Consumer Depth Camera for Computer Vision, Zurich, Sept. 2014 ◊ INTEL Science and Technology Center For Visual Computing - Retreat, Monterey, CA, October 2014
- “Human pose recognition: from 3rd person to 1st person views”, INRIA, Grenoble, Sept. 2014
- “Learning and Predicting Hand/Object Interactions”, UC Irvine, USA, May 2014
- “Writing a successful MC proposal”, Jornada Informativa Convocatorias 2013 de Acciones Marie Curie, Zaragoza, Spain, June 2013
- “Advances in Exemplar-based Monocular Human Body Pose Analysis: Modeling, Detection and Tracking”, PhD Defense, Universidad de Zaragoza, Spain, June 2012 ◊ Joint Research Center, Ispra, Italy, Oct 2012 ◊ UC Irvine, USA, June 2013
- “Randomized Trees for Human Pose Detection”, Oxford Brookes University, UK, May 2008 ◊ I3A, Zaragoza, Spain, April 2008
- “Exploiting Spatio-Temporal Constraints for Robust 2D Pose Tracking”, Oxford Brookes University, UK, October 2007 ◊ ICCV Workshop on Human Motion - Understanding, Modeling, Capture and Animation, Rio, Brazil, Oct.2007
- “Probabilistic Spatio-Temporal 2D-Model for Pedestrian Motion Analysis in Monocular Sequences”, CVC, Barcelona, Spain, June 2006 ◊ AMDO, Andratx, Spain, July 2006 ◊ Oxford Brookes University, UK, July 2007

PhD / M.Sc. Theses (co-)Supervised

PhD theses

- N. Chesneau. Learning to Recognize Actions with Weak Supervision. MSTII, Univ. Grenoble Alpes, February 2018.

MSc theses

- P. de Jorge. Deep Neural Networks for 3D body shape and pose prediction in real images. MSIAM, ENSIMAG, Univ. Grenoble Alpes, June 2017. (grade: 16.5/20)
- E. Le Roux. Learning action recognition from 3D poses. MSIAM, ENSIMAG, Univ. Grenoble Alpes, June 2017. (grade: 15.6/20)
- A. Gañán. Facial Expression Recognition in Video Sequences. Department of Electrical Engineering, Univ. of Zaragoza, July 2008. (grade: 9,5/10 - oral presentation at IbPRIA09)
- F. Cuq. Construction of Color Models for Human Figure Tracking in Video Sequences. Dep. of Electrical Engineering, Univ. of Zaragoza, Sept. 2005. (grade 9,3/10)
- D. Gaymu. Human Localization and Segmentation for Video-surveillance Applications. Dep. of Electrical Engineering, Univ. of Zaragoza, Sept. 2005. (grade 8,5/10)

Theses Examined

- A. H. Rasheed, M.Sc. Thesis: Deep Learning for 3D Human Forms. Univ. Grenoble Alpes, France, September 2018. External Reviewer.
- T-H. Pham, Ph.D. Thesis: Contact Force Sensing From Motion Tracking. Univ. de Montpellier, France, Dec. 2016. Jury member.
- M. Salas, Ph.D. Thesis: Scene Understanding for Mapping. Department of Computer Sciences, Univ. de Zaragoza, Spain, January 2016. External Reviewer.
- W. Gong, Ph.D. Thesis: 3D Motion Data aided Human Action Recognition and Pose Estimation. Department of Computer Sciences, Univ. Autonoma de Barcelona, Spain, May 2013. Jury Member.

Languages

- **English:** full professional proficiency (2 years living in the U.S.A.)
- **French:** native speaker. **Spanish:** bilingual proficiency.
- **German:** elementary proficiency. **Greek:** very basic knowledge (6 months in Greece).

Professional Activities: Academic Service, Contributions, Membership

- **Session Chair** at CVPR 2016.
- **Organizer** of the 1st CVPR Workshop on “Human Pose, Motion, Activities and Shape in 3D (3D HUMANS 2018)” , Salt Lake City, June 18th 2018.
- **Co-organizer** of the 3 editions of the CVPR Workshop on “Observing and understanding hands in action (HANDS)”: HANDS 2015 in Boston, June 2015, HANDS 2016 in Las Vegas, July 2016 and HANDS 2017 in Venice, October 2017.
- **Funding Agency Reviewer:** Agence Nationale de la Recherche (ANR) 2017
- **Journal Reviewing:** IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), International Journal of Computer Vision (IJCV), Computer Vision and Image Understanding (CVIU), Image and Vision Computing, IEEE Transactions on System, Man and Cybernetics (SMC), Neurocomputing, IEEE Transactions on Human-Machine Systems, Robotics and Autonomous Systems, Machine Vision and Applications, Journal of Biomedical and Health Informatics, IEEE Robotics and Automation Letters, Big Data, IEEE Transactions on Cybernetics.
- **Program Committee Member:** Computer Vision and Pattern Recognition (CVPR) 2017, 2018, European Conf. on Computer Vision (ECCV) 2010, 2016, 2018, International Conf. on Machine Learning (ICML) 2018, Neural Information Processing Systems (NIPS) 2016, 2017, International Conf. on Computer Vision (ICCV) 2017, British Machine Vision Conf. (BMVC) 2017, Intelligent Robots and Systems (IROS) 2017, International Conf. on Pattern Recognition (ICPR) 2010, European Conf. on Mobile Robots (ECMR) 2013.
- **Workshop Program Committee:** ICCV Workshop on Wearable Computer Vision Systems (WCVS) 2013. CVPR Workshop on Egocentric (First Person) Vision 2016.

Applied Research - Results and Initiatives

- **CVPR 2015 Demo.** Real-time 3D Pose Recognition from a Chest-mounted RGB-D Camera. with James. S. Supancic and Deva Ramanan, UC Irvine
- **Development of the real-time Proof of Concept demonstrator:** Real Time Human Pose & Motion Capture, and Analysis (HPMCA), supervised by Prof. Philip H.S. Torr, funded by The Research and Business Development Office (RBDO) at Oxford Brookes University (UK), Reference: 289/32/23, delivered: 1st prototype working with a Sony EyeToy camera (July 2010), 2nd prototype working with a SR4000 Time-of-Flight camera (Oct 2010).
- Attendance to a **2 day course** on “Commercialization of IP” and “How to Start a Successful Business”, speaker: Prof. Russell Smith, Oxford Brookes University, April 2010
- **Preparation of the grant proposal:** “Track4Rehab” entitled “Robust and Real-time Pose Tracking for In Home Motor Rehabilitation using Online Learning” submitted to the Marie Curie FP7-PEOPLE-2009-IEF call, with Professor Philip H. S. Torr and Prof. Helen Dawes, Oxford Brookes University, March-August 2009, score: 84.30% (1st in the reserve list of the ENG panel) .
- **Development of a prototype** for car license plate recognition, successfully transferred to the company DeInta (<http://www.deinta.com/pdf/cap.pdf>), Zaragoza, Spain, 2004 .

Press (Spanish)

- “Grégory Rogez (CV Lab) premiado por la AERFAI”, Boletín del Instituto de Investigación en Ingeniería de Aragón, no 33, pp 2, May-Jun 2013.
- “El camino hacia la excelencia en investigación”, Blog del I3A sobre actualidad científica e I+D+i, <http://i3a.unizar.es/blog/2013/06/26/>

Technical Skills

- Markup and Programming Languages: \LaTeX , (X)HTML, MATLAB, C/C++, Java, Python
- IDE: Visual Basic, Visual Studio, Qt Creator
- Applications: MS Office, Matlab, Visual Studio, Simulink, MS Project, Photoshop, Gimp, Virtual Dub, Autocad, Labview, Blender, Maya, Poser, Dependency Walker, Doxygen, Process Explorer.
- Experience with specialized hardware and software: Machine learning and computer vision libraries (Caffe, OpenCV, Spider, stprtool, SVM-light, etc.), 3D Computer Graphics (VTK), version Control (Tortoise SVN, CVS), remote access (SSH), Condor cluster, cameras (webcam, PlayStation Eye, Depth/ToF cameras, Infrared detector, Dome), Vicon Motion Capture.