

David Gerónimo

Head of R&D, Partium

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Barcelona, Spain

Machine Learning, Computer Vision, Natural Language Processing.

EDUCATION

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| 2006-2010 | Ph.D. with Honors in Computer Vision , Universitat Autònoma de Barcelona, Spain.
Thesis: "A global approach to vision-based pedestrian detection for advanced driver assistance systems". Advisor: Prof. Antonio M. López. |
| 2004-2006 | M.Sc. in Computer Vision , Computer Vision Center, Spain.
Thesis: "Model features and horizon line estimation for pedestrian detection in advanced driver assistance systems". Advisor: Prof. Antonio M. López. |
| 2002-2004 | B.Sc. in Computer Science , Universitat Autònoma de Barcelona, Spain.
Final Project: "Computer vision applied to intelligent vehicles". Advisor: Prof. Joan Serrat. |
| 1999-2002 | B.Sc. in Technical Engineering in Computer Systems , Univ. Autònoma de Barcelona, Spain. |

EXPERIENCE

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| 2020-present | Head of R&D , Partium (Spain, Austria, USA). <ul style="list-style-type: none">● Servant leader. I lead a team of 5 researchers in different locations (Spain and Austria). My role is two-fold: 1) to lead the team to attain our objectives by fostering key values such as communication, collaboration, clear objectives and project definitions, mentoring, roadmap definition and research integrity; and 2) to foster good methodologies and practices in the team.● Research and development tasks:<ul style="list-style-type: none">· Inception of ML components, including requirements analysis in the context of the product, architecture design, experiments and production-ready implementation.· Data management (ETL, format definition, organization, etc.)· Design and development of frameworks to carry out our R&D.· Coordination with other product and engineering teams. |
| 2020 | Senior VP of Applied Research , Slyce (Spain, USA). <ul style="list-style-type: none">● Servant Leader. I coordinated and facilitated for a team of 6 machine learning researchers of different profiles (juniors and seniors) in different locations (Spain, USA and Canada). My objective consisted in fostering communication and collaboration among the team so that our research objectives and efforts were focused an effective.● Research and development of several components of a system for home-improvement parts retrieval: data analysis and preparation to metric learning techniques for visual retrieval. |

- 2019-2020 **Head of Machine Learning**, Catchoom Technologies (Spain).
- Facilitation and key contribution to roadmap definition and execution.
 - Servant Leader, promoting ML research and helping the team achieve their goals.
 - Research and Development of deep learning architectures and algorithms.
 - Analysis and design of product features.
 - Advise students and talent hiring.
- 2014-2019 **Lead Research Scientist**, Catchoom Technologies (Spain).
- Design and Development of solution foundations (DL framework, infrastructure, etc.)
 - Research and Development of deep learning architectures and algorithms
 - Analysis and design of product features
 - Research Group management
 - Advise students and talent hiring
 - Write proposals and execute public funded projects
- 2013-2014 **Postdoctoral Researcher**, KTH Royal Institute of Technology (Sweden).
- 2-yr Postdoc in the Computer Vision and Active Perception Lab (Sup. Hedvig Kjellström).
 - Topic: Forensic Surveillance Video Analysis (Image- and text-based person retrieval).
- 2011 **Visiting Fellow**, LAAS-CNRS (France).
- 6-month stay at the Robotics, Action and Perception Lab (Sup. Frédéric Lerasle).
 - Topic: State-based multi-target particle filtering tracking.
- 2010-2012 **Postdoctoral Researcher and Assistant Lecturer**, Univ. Autònoma de Barcelona (Spain).
- Research in pedestrian detection and tracking.
 - Teaching Assistant of BSc in Computer Science and BSc in Telecommunications.
 - Assistant Lecturer and Project Coordinator of MSc in Computer Vision.
- 2010-2012 **Assistant Lecturer**, Universitat Oberta de Catalunya (Spain).
- Assistant Lecturer in an Online Education University in several BSc Degrees.
- 2007 **PhD Student Internship**, University of Surrey (United Kingdom).
- 6-month stay at the Centre for Vision, Speech and Signal Proc. (Sup. Krystian Mikolajczyk)
 - Topic: Multi-class object classification based on hierarchical implicit shape models.
- 2006-2010 **PhD Student**, Computer Vision Center (Spain).
- 3.5-yr (Sup. Antonio M. López).
 - Topic: Pedestrian Detection in Advanced Driver Assistance Systems.
 - Development of a driver assistance framework (+200k lines, VC++), datasets, etc.
 - Developer of group and project websites.
 - Teaching Assistant of BSc in Computer Science.

SKILLS

Hard	Python, C/C++, Lua, Java, Matlab, PHP, Javascript, SQL, Latex, HTML/CSS. OpenCV, Linux.
Soft	Teamworker, critical, organised.
Languages	English (C1/c2), Swedish (C1), Catalan (Native), Spanish (Native)

TEACHING EXPERIENCE

Universitat Oberta de Catalunya

2010/11/12	Object-oriented design and programming (Java Lab) (BSc in Computer Science, BSc in Telecommunications and BSc in Multimedia)
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Universitat Autònoma de Barcelona

2019-20	Smart Data Knowledge / Analytics (MSc Internet of Things for eHealth)
2012	Computer Vision Module 3 Project (MSc Computer Vision & Artificial Intelligence)
2012	Foundations of Software Engineering (BSc in Telecommunications)
2009/10/11	Local Image Descriptors (MSc Computer Vision & Artificial Intelligence)
2010	Software Engineering 1 (BSc in Computer Science)
2010	Computer Graphics 1 (BSc in Computer Science)
2010	Graphical Techniques (BSc in Computer Science)
2008/09	Software Engineering 2 (BSc in Computer Science)
2004	Programming Languages (BSc in Computer Science)

AWARDS AND CERTIFICATES

2012	Extraordinary Doctorate Award 2009-2010
2010	Assistant Professor Certificate (Lector) – AQU (Catalan Gov.)
2010	Assistant Professor Certificate (Profesor Ayudante Doctor) – ANECA (Spanish Gov.)
2010	Doctor Europaeus Certificate

RESEARCH GRANTS

2013-2014	Beatriu de Pinós (Marie Curie Actions) Postdoctoral Grant (Catalan Government) Competitive, 8% applications are granted. (Declined in Oct-2014)
2011	AIRE-CTP Postdoctoral Mobility Grant (Catalan Government) Competitive, 9% applications are granted (ranked 1st).
2007	FPI Doctoral Mobility Grant (Spanish Government) Competitive.
2005-2009	FPI Doctoral Fellowship (Spanish Government) Competitive.
2004-2008	FPD Doctoral Fellowship (Universitat Autònoma de Barcelona) (Declined in 2005)

PARTICIPATION IN PUBLIC FUNDING PROJECTS

2015-2017	AVANZA - Fashion Look Search and Parsing. (Spanish Ministry of Industry – Project TSI-100600-2015-37)
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2013-2014	FOVIAL: FOrensic VIdeo AnaLysis – finding out what really happened. (Vetenskapsrådet – Swedish Research Council Project 2013-5473)
2012	eCo-DRIVERS: Ecologic Cooperative Driver and Road Intelligent Visual Exploration for Route Safety. (Spanish MEC Project TRA2011-29454-C03-00-00) http://www.cvc.uab.es/adas/projects/eco-drivers/
2007-2012	MIPRCV: Multimodal Interaction in Pattern Recognition and Computer Vision. (Spanish CONSOLIDER INGENIO-2010 Project CSD2007-00018)
2007-2010	Computer Vision Based Detection and Tracking of Vehicles and Pedestrians for ADAS. (Spanish MEC Project TRA2007-62526/AUT)
2004-2007	Computer Vision Detection and Tracking of Vehicles, Pedestrians. Validation on an Intelligent Vehicle Prototype. (Spanish MEC Project MEC TRA2004-06702/AUT)

PUBLICATIONS

Patents

E. Cervantes, D. Gerónimo, S.F. Husain, T. Adamek, **“Classifying data”**, Publication number: 20190340507. PCT Patent. Priority Date: Jan 17, 2017. Publication Date: Nov 7, 2019. Applicant: Catchoom Technologies.

Journals

D. Vázquez, A.M. López, J. Marín, D. Ponsa and D. Gerónimo, **“Virtual and Real World Adaptation for Pedestrian Detection”**. In *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 3636, Num. 4, pp. 797–809, 2014.

D. Gerónimo, J. Serrat, A.M. López and R. Baldrich, **“Traffic Sign Recognition for Computer Vision Project-Based Learning”**. In *IEEE Transactions on Education*, Vol. 56, Num. 3, pp.364-371, 2013.

D. Gerónimo, A.M. López, A.D. Sappa and T. Graf, **“Survey of Pedestrian Detection for Advanced Driver Assistance Systems”**. In *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 32, Num. 7, pp.1239-1258, 2010.

D. Gerónimo, A.D. Sappa, D. Ponsa and A.M. López, **“2D-3D-based on-board pedestrian detection system”**, In *Computer Vision and Image Understanding (Special Issue on Intelligent Vision Systems)*, Vol. 114, Num. 5, pp. 583-595, 2010.

A.D. Sappa, F. Dornaika, D. Ponsa, D. Gerónimo and A. López. **“An Efficient Approach to Onboard Stereo Vision System Pose Estimation”**, In *IEEE Transactions on Intelligent Transportation Systems*, Vol. 9, Num. 3, pp. 476-490. 2008.

A.D. Sappa, D. Gerónimo, F. Dornaika and A. López, **“On-board camera extrinsic parameter estimation”**, *IEE Electronics Letters*, 42(13), pp. 645-747, 2006.

Conferences

D. Gerónimo and H. Kjellström, **“Generative One-Class Models for Text-based Person Retrieval in Forensic Applications”**, arXiv:1611.05915 [cs.CV], 2016.

D. Gerónimo and H. Kjellström, **“Unsupervised surveillance video retrieval based on human action and appearance”**, *Proc. International Conference on Pattern Recognition*, pp. 4630–4635, Stockholm, Sweden, 2014.

D. Gerónimo, F. Lerasle and A. M. López, **“State-driven particle filter for multi-person tracking”**, *Proc. Advanced Concepts for Intelligent Vision Systems, Brno, Czech Republic, 2012*.

Y. Socarrás, A.M. López, D. Vázquez, D. Gerónimo and T. Gevers, **“Improving Histogram of Oriented Gradients with Image Segmentation: Application to Human Detection”**, *Proc. Advanced Concepts for Intelligent Vision Systems, Brno, Czech Republic, 2012*.

K. Paleček, D. Gerónimo and F. Lerasle, **“Pre-attention cues for person detection”**, *COST 2012 Training School*, pp. 225–235, Dresden, Germany, 2011.

J. Amores, D. Gerónimo and A.M. López, **“Multiple instance learning for weakly-supervised object-class segmentation”**, *In Proc. International Conf. on Machine Vision, Hong Kong, China, 2010*.

J. Marín, D. Vázquez, D. Gerónimo and A.M. López, **“Learning appearance in virtual scenarios for pedestrian detection”**, *In Proc. IEEE Int. Conf. on Computer Vision and Pattern Recognition, San Francisco, 2010*.

A.D.Sappa, F. Dornaika, D. Gerónimo and A.M. López, **“Registration-based moving object detection from moving camera”**, *In Proc. International Conference on Intelligent Robots and Systems, 2nd Workshop on Planning, Perception and Navigation for Intelligent Vehicles*, pp. 65–69, Nice, France, 2008.

D. Gerónimo, A.D. Sappa, J. Alvarez and A. López. **“Searching space reduction for on-board pedestrian detection”**. *In Current Challenges in Computer Vision. Proc. Of the Third CVC Workshop*, pp. 7–12. 2008.

D. Gerónimo, A.D. Sappa, A. López and D. Ponsa, **“Adaptive Image Sampling and Windows Classification for On-Board Pedestrian Detection”**, *In Proc. Intl. Conference on Computer Vision Systems. Bielefeld, Germany, 2007*.

D. Gerónimo, A. López and A. Sappa. **“Computer Vision Approaches to Pedestrian Detection: Visible Spectrum Survey”**, *In Proc. of the 3rd Iberian Conference on Pattern Recognition and Image Analysis, Part 1, LNCS 4477*, pp.547–554. Girona, Spain, 2007.

D. Gerónimo, A. López, D. Ponsa and A. Sappa. **“Haar Wavelets and Edge Orientation Histograms for On-Board Pedestrian Detection”**, *In Proc. of the 3rd Iberian Conference on Pattern Recognition and Image Analysis, Part 1, LNCS 4477*, pp. 418–425. Girona, Spain, 2007.

A.D. Sappa, F. Dornaika, D. Gerónimo and A. López, **“Efficient On-Board Stereo Pose Estimation”**, *In Proc. EUROCAST 2007, Workshop on Cybercars and Intelligent Vehicles, LNCS 4739*, pp. 1183–1190. Las Palmas de Gran Canaria, Spain, 2007.

A.D. Sappa, R. Herrero, F. Dornaika, D. Gerónimo and A. López, **“Road Approximation in Euclidean and v-disparity space: A Comparative Study”**, *In Proc. EUROCAST 2007, Workshop on Cybercars and Intelligent Vehicles, LNCS 4739*, pp. 1105–1112. Las Palmas de Gran Canaria, Spain, 2007.

A.D. Sappa, D. Gerónimo, F. Dornaika and A. López, **"Real Time Vehicle Pose Using On-Board Stereo-Vision System"**, *In Proc. Intl. Conference on Image Analysis and Recognition, LNCS 4142*, pp. 205-216, Póvoa de Varzim, Portugal, 2006.

D. Gerónimo, A.D. Sappa, A. López and D. Ponsa, **"Pedestrian Detection using AdaBoost learning of features and vehicle pitch estimation"**, *In Proc. IASTED Intl. Confernce on Visualization, Imaging and Image Processing*, pp. 400-405, Palma de Mallorca, Spain, 2006.

Books

D. Gerónimo and A.M. López, **"Vision-based pedestrian protection systems for intelligent vehicles"**, SpringerBriefs in Computer Science, Springer, ISBN 978-1-4614-7987-1, 2014.

F. Diego, D. Gerónimo and J. Vazquez-Corral (Eds.), **"State of the Art of Research and Development in Computer Vision. Proceedings of the Sixth CVC Workshop"**, Computer Vision Center, ISBN-978-84-938351-5-6, 2011.

Book Chapters

D. Gerónimo, D. Vázquez, A. de la Escalera, **"Vision-based Advanced Driver Assistance Systems"**, in *Computer Vision in Vehicle Technology: Land, Sea and Air* (Ed. A.M. López, A. Imiya, T. Pajdla, J.M. Álvarez), Wiley, ISBN: 978-1-118-86807-2, pp. 95-117, 2017.

D. Vázquez, A.M. López, D. Ponsa and D. Gerónimo, **"Interactive training of human detectors"**, in *Multimodal Interaction in Image and Video Applications* (Ed. A.D. Sappa and Jordi Vitrià), Springer, pp. 169-184, 2013.

J. Marín, D. Gerónimo, D. Vázquez and A.M. López, **"Pedestrian detection: exploring virtual worlds"**, in *Handbook of Pattern Recognition: Methods and Applications* (Ed. K. Hosny and J. de la Calleja), i-Concept Press, 2012.

A.D. Sappa, D. Gerónimo, F. Dornaika, M. Rouhani and A.M. López, **"Moving object detection from mobile platforms using stereo data registration"**, *Chapter 3 in Computational Intelligence Paradigms in Advanced Pattern Classification. Studies in Computational Intelligence* (Ed. M.R. Ogiera and L.C. Jain), Springer-Verlag Book Series, vol. 386/2012, pp. 25-37, 2012.

D. Gerónimo, A.D. Sappa and A.M. López, **"Stereo-based Candidate Generation for Pedestrian Protection Systems"**. *Chapter 9 in Binocular Vision: Development, Depth and Disorders* (Ed. Jacques McCoun and Lucien Reeves), NOVA Publishers, pp. 189-208, 2010.

A.D. Sappa, D. Gerónimo, F. Dornaika and A. López, **"Stereo vision camera pose estimation for On-board applications"**, *Chapter 3 in Scene Reconstruction, Pose Estimation and Tracking*, Rostam Stoking, pp. 39-50, 2007.

Non-Indexed Publications

D. Gerónimo, **"People Power"**, *In Vision Zero International*, pp. 28-33, January 2011.

D. Gerónimo and A.M. López, **"Detecció de vianants per a sistemes avançats d'assistència al conductor"** (Spanish/Catalan). *In UAB Divulga*, September 2010.

D. Gerónimo and A.M. López, **“Sistema de detecció de vianants”** (Spanish/Catalan). In *UAB Divulga*, April 2010.

STUDENT ADVISING

- 2022 **Andreu Cuevas** – BSc Student from UAB at Partium.io (Spain)
“Data Engineering”
- 2019 **Mar Ferrer** (co-advised with M. Ferrarons) – BSc Student from UPF at Catchoom Technologies (Spain)
“Data Acquisition”
- 2018 **Joan Cañellas** – BSc Student from UPF at Catchoom Technologies (Spain)
“Fashion Data Crawling”
- 2017 **Pierre Saelins** – BSc Student from UPSSITECH at Catchoom Technologies (Spain)
“Deep Learning applied to fashion images”
- 2012 **Albert Saà** – MSc Student at CVC (Spain)
“Traffic lights recognition in images for intelligent vehicles”
- 2011 **Karel Paleček** (co-advised with F. Lerasle) – PhD Internship at LAAS-CNRS (France)
“Pre-attention cues for person detection”
- 2009 **Hilda Caballero** (co-advised with A.M. López) – MSc Student at CVC (Spain)
“Pedestrian detection refinement via non-explicit shape models”
- 2009 **David Vázquez** (co-advised with A.M. López) – MSc Student at CVC (Spain)
“The effect of the distance in pedestrian detection”

SEMINARS AND COURSES

- 2020 **Natural Language Processing with Sequence Model**, Coursera (DeepLearning.ai)
- 2016 **Buddhism and Modern Psychology**, Coursera (Princeton University)
- 2016 **Introduction to Marketing**, Coursera (University of Pennsylvania)
- 2016 **Fundamentals of Project Planning and Management**, Coursera (University of Virginia)
- 2015 **Executive Master in Innovation**, Escuela de Organización Industrial, Madrid, Spain
- 2014 **Intro to Data Science**, Udacity.
- 2014 **Discrete Inference and Learning in Artificial Vision**, Coursera (École Centrale Paris).
- 2012 **Introduction to European R&D&I Projects (H2020)**, AGAUR, Barcelona, Spain.
- 2012 **Machine Learning**, Coursera (Stanford University).
- 2008 **AERFAI Summer School on New Trends in Pat.Rec.for Motion Analysis**, Barcelona, Spain.
- 2007 **Fifth Int. Summer School on Pattern Recognition**, Plymouth, United Kingdom.
- 2006 **Fifth LEARNING Workshop (LARCA & PASCAL Dialogues)**, Vilanova i la Geltrú, Spain.
- 2006 **AERFAI Summer School on Action and Object Classification Techniques in Digital Images**, Granada, Spain.

PROFESSIONAL SERVICE

Organization and Boards

2013/14	General Chair – Int. Workshop of Computer Vision in Vehicle Technology
2011/12	Organizing Chair – Int. Workshop of Computer Vision in Vehicle Technology
2011	Local Arrangement – Int. Conference on Computer Vision (ICCV)
2011	General Chair – CVC Workshop on R&D
2011	Editorial Board – Int. Journal of Computer Vision and Signal Processing

Program Committees

2015	Int. Conf. Computer Vision Systems (ICVS)
2015/16/17	Int. Workshop of Computer Vision in Vehicle Technology
2014	Workshop on Scene Understanding for Autonomous Systems (@ACCV14)
2014-17	Workshop on Activity Monitoring by multiple distributed sensing
2010-2013	IASTED Conf. on Comp. Graphics and Imaging
2011/13	Int. Conf. on Informatics, Electronics & Vision
2012	ACM/IEEE/IFAC/TRB Int. Conf. on Connected Vehicles and Expo
2011	IASTED Conf. on Computer Vision

Journal Reviewing

2011-17	IEEE Transactions on Intelligent Transportation Systems (TITS)
2016	IEEE Transactions on Cybernetics (TCyb)
2011/13/14	Computer Vision and Image Understanding – Elsevier (CVIU)
2014	Electronic Letters on Computer Vision and Image Analysis (ELCVIA)
2013	Int. Journal of Computer Vision – Springer (IJCV)
2013	Signal Image and Video Processing – Springer
2013/17	Pattern Recognition Letters – Elsevier (PRL)
2013	IEEE Transactions on Circuits and Systems for Video Technology
2010-2013	IEEE Transactions on Neural Networks and Learning Systems (TNN)
2012/13	IEEE Transactions on Vehicular Technology (TVT)
2012/13	Optical Engineering – SPIE
2012	IET Image Processing (TIP)
2012	IEEE Transactions on Education
2012	Scientific Research and Essays
2012	Applied Soft Computing – Elsevier
2011	Int. Journal of Computer Vision and Signal Processing
2011	Aerospace Science & Technology – Elsevier
2010	Computers and Mathematics with Applications – Elsevier
2010	Journal of Real-time Image Processing – Springer

Conference Reviewing

2014-20	IEEE Int'l Conf. on Computer Vision and Pattern Recognition (CVPR)
2018-2019	Int. Workshop on Autonomous Driving
2016,18	Asian Conference on Computer Vision (ACCV)
2017	ACM Multimedia (MM)
2015,17	Int'l Conf. On Computer Vision (ICCV)
2017	British Machine Vision Conference (BMVC)
2016	Int. Workshop on Transferring and Adapting Source Knowledge in CV
2014, 16	European Conference on Computer Vision (ECCV)
2015	IEEE Int'l Conf. on Robotics and Automation (ICRA)
2009-2015	IEEE Int'l Conf. on Image Processing (ICIP)
2014	IEEE Int'l Conf. On Pattern Recognition (ICPR)
2010-11/13-15	IEEE Int'l Conf. Intelligent Vehicles Symposium (IV)
2010/13/15	IEEE Int'l Conf. Intelligent Transportation Systems (ITSC)

2010-2013	IASTED Conf. on Comp. Graphics and Imaging
2011-2013	Int. Workshop of Computer Vision in Vehicle Technology (CVVT)
2012	EURASIP European Signal Processing Conference
2011	IASTED Conf. on Comp. Vision
2007-2009	Int'l Conf. on Intelligent Computing

Other Services

2015	Project Reviewer of the STW - Netherland Technology foundation
2013	Project Reviewer of FONDECYT - Ministry of Education of Chile
2013	PhD Thesis Committee (M. R. Anwer)
2011	MSc Thesis Committee (R. Gimeno, L. Ruíz, Y. Socarrás)
2011	IET Book Reviewer