

JORGE BERNAL DEL NOZAL

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Postdoctoral Researcher at Computer Science Department, Universitat Autònoma de Barcelona (UAB). Researcher at Computer Vision Center (CVC).

https://scholar.google.es/citations?user=GsyL_kUAAAAJ&hl=es



Personal Data

Date of birth: 30/04/1983

Languages: Spanish (native), English (C1), Catalan (C1)

Research interests: Computer vision, Endoscopy image and video processing, Machine Vision, Low-level image processing

Education

PhD in Computer Science (UAB, Spain)	December 2012
Dissertation title: "Polyp Localization and Segmentation in Colonoscopy Images by Means of a Model of Appearance for Polyps"	
Advisors: PhD. F. Javier Sánchez Pujadas and PhD. Fernando Vilariño	
MSc in Computer Vision and Artificial Intelligence (UAB, Spain)	September 2009
Dissertation title: "Use of Projection and Back-projection Methods in Bidimensional Computed Tomography Image Reconstruction"	
Advisor: PhD. F. Javier Sánchez Pujadas	
BSc in Telecommunications Engineering (Universidad de Valladolid, Spain)	March 2007

Research and Professional Experience

Postdoctoral Researcher, Computer Science Department, UAB and CVC	2013-present
<ul style="list-style-type: none">Responsible of colonoscopy image processing research lineDevelopment of computer-aided diagnosis support tools (polyp localization and segmentation) and image preprocessing methodsCollaboration with bronchoscopy image processing research line	
Predoctoral researcher, Computer Science Department, UAB and CVC	2008-2012
<ul style="list-style-type: none">Main developer of polyp characterization methods within a Spanish-government funded research project (COLON-QA)Collaboration with researchers from GV2 group at Trinity College, Dublin in studies aiming to compare performance of polyp searching tasks between automatic methods vs clinicians performance when observing the same endoscopy video	
Postgraduate Researcher, CEDETEL S.A	2008
<ul style="list-style-type: none">Application development oriented at intelligent houses (sensor data management)	

Teaching and Mentoring Experience

Teaching: Participation in UAB official graduate teaching program (Total number of hours taught: 660):

- Compilers I and II, 5th course of Computer Science Engineering (2009-2013) and 3rd course of Graduate in Computer Science Engineering (2012-2015)
- Artificial Intelligence II, 4th-5th course of Computer Science Engineering (2008-2009)
- Computer Vision, 4th-5th course of Computer Science Engineering (2012-2013)
- Software Management and Development 3rd course of Graduate in Computer Science Engineering (2014-2015)
- Databases, 2nd course of Graduate in Computer Science Engineering (2014-2016)

Mentoring:

- Co-director of a PhD thesis defended in 2014 by Carles Sanchez Ramos "Tracheal Structure Characterization Using Geometric And Appearance Models For Efficient Assessment Of Stenosis In Videobronchoscopy"
- Co-director of a PhD thesis to be defended in 2017 by Antonio Esteban Lansaque "3D Endoscopy Navigation"
- 1 end of degree project in Computer Science Engineering (2013-2014) and 3 end of degree project in Graduate in Computer Science Engineering (2014-2015)

Honors and Awards

Organization of 1st and 2nd Polyp Detection Challenges in ISBI and MICCAI conferences	2015
PRODUCTE 2014 AGAUR call winning project SENSEA	2015
Best Paper Award at MICCAI CARE 2014 "Discarding Non Informative Regions for Efficient Colonoscopy Image Analysis"	2014
Best Paper Award at MICCAI CLIP 2014 "On-line lumen centre detection in gastrointestinal and respiratory endoscopy"	2013
Predocctoral studies grant by UAB (4 awarded in the same area that year)	2008
Predocctoral studies research stage funding grant by UAB (20 awarded that year)	2011

Publications

Indexed journals:

Bernal, J., Sánchez, F. J., Fernández-Esparrach, G., Gil, D., Rodríguez, C., & Vilariño, F. (2015). *WM-DOVA maps for accurate polyp highlighting in colonoscopy: Validation vs. Saliency maps from physicians*. Computerized Medical Imaging and Graphics, 43, 99-111.

Bernal, J., Sánchez, F. J., & Vilariño, F. (2012). *Towards automatic polyp detection with a polyp appearance model*. Pattern Recognition, 45(9), 3166-3182.

Sánchez, C., **Bernal, J.,** Sánchez, F. J., Diez, M., Rosell, A., & Gil, D. (2015). *Toward online quantification of tracheal stenosis from videobronchoscopy*. IJCARS, 1-11.

Book chapters:

Bernal, J., Sánchez, F. J., Fernández-Esparrach, G. and Rodríguez de Miguel, C. (2015, in press). *Building up the future of colonoscopy: A synergy between clinicians and computer scientists*. Colonoscopy and Colorectal Book. INTECH Open Access Publisher.

Bernal, J., Vilariño, F., & Sánchez, F. J. (2011). *Towards intelligent systems for colonoscopy*. Colonoscopy Book. INTECH Open Access Publisher.

International conferences (main recent ones):

Bernal, J., Sánchez, F. J. and Vilariño, F. (2013, July). *Impact of Image Preprocessing Methods on Polyp Localization in Colonoscopy Frames*. IEEE EMBC, Osaka, Japan.

Bernal, J., Núñez, J.M, Sánchez, F. J. and Vilariño, F. (2014, September). *Polyp Segmentation Method in Colonoscopy Videos by Means of MSA-DOVA Energy Maps Calculation*. MICCAI CLIP, Boston, EEUU.

Bernal, J., Gil, D, Sánchez, C. and Sánchez, F.J. (2014, September). *Discarding non informative regions for efficient colonoscopy image analysis*. MICCAI CARE, Boston, EEUU.

Bernal, J., Sánchez, F. J., Vilariño, F., Arnold, M., Ghosh, A., & Lacey, G. (2014, March). *Experts vs. novices: applying eye-tracking methodologies in colonoscopy video screening for polyp search*. In Proceedings of the Symposium on Eye Tracking Research and Applications (pp. 223-226). ACM.

References

PhD. F. Javier Sánchez, Professor at Computer Science Department (UAB) and Head of Machine Vision group (CVC) (+34 935811828), javier@cvc.uab.es

PhD. Ernest Valveny, Professor and Head of Computer Science Department University Autònoma de Barcelona (+34 935811828), ernest@cvc.uab.es