

# Alma Eguizabal Aguado

## Curriculum Vitae

### Contact Details

Signal & System Theory Group  
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Born in Spain, 28th February 1988

### Research interests

Medical Image Processing for Computer Assisted Surgery (CAS)

Machine Learning for Image Processing and Computer Vision

Statistical Shape Models

Biomedical Signal Processing

### Current Position

06/2013–present    **Research Associate** in Medical Image Processing, *Universität Paderborn, Germany*

- Developing image processing algorithms for computer assisted trauma surgery.
- Collaborating in an industrial R&D project with Stryker Corp. The position was fully dedicated to industrial development for the first 21 months.
- Supervising students assistants working in the industrial project.
- Taught undergraduate seminars on the developed algorithms.
- Supervising research projects, team-work projects and theses of bachelor and master students.

### Education

10/2013–present    **PhD Student**, *Universität Paderborn, Germany*

09/2011–09/2012    **Master's Degree in Information Technologies and Communications in Mobile Networks.** *University of Cantabria, Spain.* Received award for the best master thesis of 2012, with title “Breast cancer diagnostic with blind signal separation techniques and textural analysis of optical reflectance measurements”.

09/2006–09/2011    **Degree of Ingeniero de Telecomunicación (Telecommunication Engineer's Degree).** *University of Cantabria, Spain*, graduated best in class of 2011.

### Previous Academic Experience

12/2012–05/2013    **Research and Teaching Fellow**  
Photonic Engineering Group, University of Cantabria

- Selected in a national program for talented PhD students in Spain (FPU12/04130).

- Collaborated in research projects on medical applications of engineering and funded by the Ministry of Science and Education of Spain.

10/2011–11/2012 **Research Assistant**

Photonic Engineering Group, University of Cantabria

- Developed image processing algorithms to segment breast cancer in spectroscopy images.

## Visiting researcher

09/2012–11/2012 *Institute of Biological and Medical Imaging of the Helmholtz Zentrum in Munich (Germany)* funded by DAAD (Deutscher Akademischer Austausch Dienst) Ref. A/12/71884. Topic: Blind Decoupling of Tissue Optical Properties in Real Time Intraoperative and Endoscopic Fluorescence Imaging

## Undergraduate research experience

08/2011–09/2011 *Visiting student researcher* funded by Dartmouth College  
Optics in Medicine Laboratory, Thayer School of Engineering at Dartmouth College, USA

## Selected Publications

### International journals

**A. Eguizabal**, C. Lameiro, D. Ramírez and P. J. Schreier . *Source enumeration in the presence of colored noise*. Submitted to IEEE Signal Processing Letters, December 2018.

**A. Eguizabal**, A. M. Laughney, P. B. Garcia-Allende, V. Krishnaswamy, W. A. Wells, K. D. Paulsen, B. W. Pogue, J. M. Lopez-Higuera and O. M. Conde. *Direct identification of breast cancer pathologies using blind separation of label-free localized reflectance measurements*. Biomed. Opt. Express 4 (7), pp. 1104-1118, June 2013.

### International conferences

**A. Eguizabal**, P. J. Schreier and D. Ramírez. *Model-order selection in statistical shape models*. IEEE International Workshop on Machine Learning for Signal Processing, Aalborg, September 2018.

**A. Eguizabal**, P. J. Schreier. *A weighting strategy for Active Shape Models*. IEEE International Conference on Image Processing, Beijing, September 2017.

**A. Eguizabal**, A. M. Laughney, P. B. Garcia-Allende, V. Krishnaswamy, W. A. Wells, K. D. Paulsen, B. W. Pogue, J. M. Lopez-Higuera and O. M. Conde. *ICA-guided delineation of breast cancer pathology*. IEEE International Symposium on Biomedical Imaging, Barcelona, May 2012.

## Grants, honors & awards

(2018) Awarded best paper presented by a young researcher for the work *Deep learning for object detection in fine-art paintings*, in IEEE Intl. Conf. Metrology for Archaeology and Cultural Heritage.

(2013 and 2012) SPIE Scholarship recipient

(2012) National Award in Engineering and Medicine by ASISA and the Official Association of Telecommunication Engineers of Spain to the best project of the year 2011 for the work "Photonics and enhanced classification techniques for breast pathology identification"

(2011) Best graduate in 2011 in Telecommunication Engineer's Degree.

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