

Anthony Remazeilles
6th October 1978, Saintes (17)

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Computer Science Ph.D Engineer Expert in Vision for Robotics

Areas of interest

Computer vision	Euclidean and projective geometry
Image processing	Real-time feature tracking, image matching and retrieval
Robotics	Visual servoing, mobile robotics, surgical robotics
Management	Team & project management

Current Position

Since 2008 **Project Manager and Research Engineer** at Tecnalia Research & Innovation, San Sebastian, Spain
Assistive technology, Service Robotics and Surgical Robotics

Educational background

2014-2015 **Expert in Business & Technology management**, Deusto Business School, Bilbao
2001-2004 **PhD Thesis in Computer Science**, University of Rennes I, France
2001 **Master of Science degree**, in Image and Artificial Intelligence, University of Rennes I, France
2001 **Engineer degree**, in computer science, INSA of Rennes, France

Research Experience

Since 2008 **Project Manager** at Tecnalia Research & Innovation, San Sebastian, Spain

Activity :

- Control law design for human robot physical interaction
- Control law design for flexible surgical robot

Collaborations :

- FP7 European project COGLABORATION on physical human robot interaction
- FP7 European project STIFF-FLOP on flexible surgical robotics

2008-2012 **Research Engineer** à Tecnalia R&I, within Health and Industrial Systems Divisions

Activities :

- Vision-based control of powered wheelchairs
- Contribution to the development of a vision-based person detector for smart street lamps
- Contribution to the development of a vision-based extended audio-guide
- Vision-based robotic arm control for Human-Robot interaction (plan Nacional FLUENT)
- Natural interaction with mobile platforms

Collaborations :

- National (ACROSS, SIMBOLO) and European (FP7 Florence) projects on Service Robotics

- 2006-2008** **Postdoctoral position** at CEA-LIST, LTC Laboratory, Fontenay aux Roses
Unknown object grasping by stereovision, for disabled people assistance.
- Collaborations :**
- European project ITEA2 ANSO related to the integration within a smart home of a mobile robotique platform
 - National project AVISO on the use of a catadioptric sensor to ease object selection for semi-automatic grasping
- Supervision:**
- Two Master trainings (stereovision vision-based object localization, collaborative control of mobile platform and robotic arm)
- 2004-2006** **ATER** (research position) in Lagadic and Texmex projects, IRISA (Institut de Recherche en Informatique et Systèmes Aléatoires)
Vision-based navigation of car-like robots within urban environments
- Supervision:**
- Two postdocs (18 month) in the continuity of my Ph.D work
- 2001-2004** **PhD thesis** in Lagadic and Texmex projects, IRISA, supervised by François Chaumette and Patrick Gros - defended the 15th of December 2004:
Navigation à partir d'une mémoire d'images (Navigation from a visual memory)
- National collaborations:**
- Contribution to ROBEA BODEGA (CNRS) and PREDIT MOBIVIP projects related autonomous robotic navigation in urban environments
- Supervision:**
- DEA training stage, related to the organization of the visual memory of a robotic system (2004)
- 2001** **DEA project thesis**, VISTA project, IRISA, supervised by François Chaumette and Patrick Gros:
Couplage perception-action par appariement d'images et asservissement visuel (Linking Perception and Action through image matching and visual servoing)

Teaching experience

- 2001-2004** **ATER** (teaching assistant), INSA, computer science department, Rennes (369 hours)
- Initiation to functional programming with SCHEME, 1st year
 - Architecture, 1st year of engineer degree in computer science (CS)
 - Networks, 2nd year CS
 - Operating Systems, 2nd year CS
 - Participation to the national robotic cup Eurobot, project in 2nd year CS
- 2001-2004** **Monitorat** (teaching assistant) IFSIC, University of Rennes I (192 hours)
- Algorithm and programming, functional approach, DEUG Sciences
 - Algorithm and programming, imperative approach, DEUG Sciences
 - Operating Systems, Computer Science License
- 2001-2004** **Vacations** (teaching assistant), INSA of Rennes (52 hours)
- Operating Systems, 2nd year CS
 - Operating system tools, 1st year CS

Publications

Patent:

- [1] *Suivi d'objets par un système stéréoscopique sans modèle 3D a priori*, A. Remazeilles
 WO2009/068641, June 2009.

International Journals:

- [2] *Experimental Evaluation of Autonomous Driving Based on Visual Memory and Image Based Visual Servoing*, A. Diosi, S. Segvic, A. Remazeilles, F. Chaumette
IEEE Transaction on Intelligent Transportation Systems, April 2011.
- [3] *Continuity of varying-feature-set control laws*, N. Mansard, A. Remazeilles, F. Chaumette
IEEE Transaction on Automatic Control, November 2009.
- [4] *A mapping and localization framework for scalable appearance-based navigation*, S. Segvic, A. Remazeilles, A. Diosi, F. Chaumette
Computer Vision and Image Understanding, February 2009.
- [5] *Asservissement visuel pour la navigation*, A. Remazeilles, F. Chaumette, P. Gros
Traitement du signal, June 2007.
- [6] *Image based robot navigation from an image memory*, A. Remazeilles, F. Chaumette
Robotics and Autonomous Systems, April 2007.

International Conferences:

- [7] *Feature Selection for Hand Pose Recognition in Human-Robot Object Exchange Scenario*, I. Rasines, A. Remazeilles, P. Iriondo.
IEEE Int. Conf. on Emerging Technologies & Factory Automation, EFTA'14, Barcelone, Spain, Sept. 2014.
- [8] *Implementation and experimental validation of Dynamic Movement Primitives for object handover*, M. Prada, A. Remazeilles, A. Koene, S. Endo.
IEEE/RSJ Int. Conf. on Intelligent Robots and Systems, IROS'14, Chicago, USA, Sept. 2014.
- [9] *Experimental testing of the CogLaboration prototype system for fluent Human-Robot object handover interactions*, A. Koene, S. Endo, A. Remazeilles, M. Prada, A. Wing.
IEEE Int. Symp. on Robot & Human Interactive Communication, Ro-Man'14, Edinburgh, Scotland, Aug. 2014.
- [10] *Relative importance of spatial and temporal precision for user satisfaction in human-robot object handover interactions*, A. Koene, A. Remazeilles, M. Prada, A. Garzo, M. Puerto, S. Endo, A. Wing.
AISB, Int. Symp. on New Frontiers in Human-Robot Interaction, London, UK, April 2014.
- [11] *Dynamic Movement Primitives for Human-Robot interaction: Comparison with human behavioral observation*, M. Prada, A. Remazeilles, A. Koene, S. Endo.
IEEE/RSJ Int. Conf. on Intelligent Robots and Systems, IROS'13, Tokyo, Japan, November 2013.
- [12] *Automatic grasping task with a catadioptric sensor for disabled people*, A. Remazeilles, C. Leroux, G. Chalubert, L. Delahoche, B. Marhic, I. Laffont, N. Biard.
Int. Conf. on Control, Automation, Robotics and Vision, ICARCV'08, Hanoi, Vietnam, December 2008.
- [13] *SAM: a robotic butler for handicapped people*, A. Remazeilles, C. Leroux, G. Chalubert.
IEEE Int. Symp. on Robot and Human Interactive Communication, RO-MAN'08, Munich, Germany, August 2008.
- [14] *Outdoor Visual Path Following Experiments*, A. Diosi, A. Remazeilles, S. Segvic, F. Chaumette.
IEEE International Conference on Intelligent Robots and Systems, IROS'07, San Diego, CA, October 2007.
- [15] *Experimental evaluation of an urban visual path following framework*, A. Diosi, A. Remazeilles, S. Segvic, F. Chaumette.
IFAC Symposium on Intelligent Autonomous Vehicles, Toulouse, France, September 2007.
- [16] *A framework for scalable vision-only navigation*, S. Segvic, A. Remazeilles, A. Diosi, F. Chaumette.
Advanced Concepts for Intelligent Vision Systems, Delft, Netherlands, August 2007.
- [17] *Large scale vision based navigation without an accurate global reconstruction*, S. Segvic, A. Remazeilles, A. Diosi, F. Chaumette.
IEEE International Conference on Computer Vision and Pattern Recognition, Minneapolis, June 2007.

- [18] *Qualitative Visual Servoing: application to the visibility constraint*, A. Remazeilles, N. Mansard, F. Chaumette. IEEE International Conference on Intelligent Robots and Systems, Beijing, China, October 2006.
- [19] *3D navigation based on a visual memory*, A. Remazeilles, F. Chaumette, P. Gros. IEEE International Conference on Robotics and Automation, Orlando, USA, May 2006.
- [20] *Enhancing the Point Feature Tracker by Adaptive Modelling of the Feature Support.* , S. Segvic, A. Remazeilles, F. Chaumette. European Conference on Computer Vision, Graz, Austria, May 2006.
- [21] *Image based robot navigation in 3D environments*, A. Remazeilles, F. Chaumette, F. Gros. International Symposium on Optomechatronic Technologies, Sapporo, Japan, December 2005.
- [22] *Robot motion control from a visual memory*, A. Remazeilles, F. Chaumette, P. Gros. IEEE International Conference on Robotics and Automation, New Orleans, USA, April 2004.
- [23] *Image interpolation for image-based control under large displacement*, Y. Mezouar, A. Remazeilles, P. Gros, F. Chaumette. IEEE International Conference on Robotics and Automation, Washington DC, USA, May 2002.

National Conferences:

- [24] *SAM : un majordome au service des personnes à mobilité réduite*, A. Remazeilles, C. Leroux, G. Chalubert. Handicap'08, Paris, France, June 2008.
- [25] *Contrôle des mouvements d'un robot à l'aide d'une mémoire visuelle*, A. Remazeilles, F. Chaumette, P. Gros. Frenc Congress on Pattern Recognition and Artificial Intelligence, RFIA'04, Toulouse, France, January 2004. Best paper award in Pattern Recognition

Miscellaneous:

- [26] *Towards Human-Robot object exchange, lessons learned*, A. Remazeilles, M. Prada, A. Garzo, I. Rasines, M. Controzzi, C. Cipriani, I. Strazzulla, C. Peccia, J. Canseco, D. Cabañeros, A. Wing, E. Gatti, M. Burgin and G. Pegman. Robotics: Science and System, RSS'15, workshop on Human-Robot handover, Roma, Italy, July 2015.
- [27] *Dynamic Movement Primitives for Human Robot Interaction*, M. Prada and A. Remazeilles. IEEE International Conference on Intelligent Robots and Systems, IROS'12, workshop on Robot Motion Planning: online, reactive and in Real-time, October 2012.
- [28] *User studies of a mobile assistance robot for supporting elderly: methodology and results*, A. Garzo, L. Martinez, M. Isken, D. Lowet and A. Remazeilles.. IEEE International Conference on Intelligent Robots and Systems, IROS'12, workshop on Assistance and Service robotics in a human environment, October 2012.
- [29] *Growing old together: when a robot becomes the best ally for ageing well*, F. Cavallaro, F. Morin, A. Garzo, A. Remazeilles, A. Rentería, G. Gaminde. Handbook on Ambient Assisted Living - Technology for Healthcare, Rehabilitation and Well-being, 2012.
- [30] *Vision-based grasping of unknown objects to improve disabled people autonomy*, A. Remazeilles, C. Dune, E. Marchand, C. Leroux. Robotics: Science and Systems, RSS'08, Manipulation Workshop: Intelligence in Human Environments, Zurich, Switzerland, June 2008.
- [31] *Visual path following using only monocular vision*, A. Diosi, A. Remazeilles, S. Segvic, F. Chaumette. IEEE International Conference on Intelligent Robots and Systems (video session), IROS'07, San Diego, CA, October 2007.
- [32] *Couplage entre l'indexation d'images et l'asservissement visuel pour la réalisation de grands déplacements*, A. Remazeilles, F. Chaumette, P. Gros. Journées des Jeunes Chercheurs en Robotique, Strasbourg, France, January 2002.
- [33] *Les invariants : introduction et application à la vision et à la robotique*, P. Gros, A. Remazeilles, F. Chaumette. Journées Nationales de la Recherche en Robotique, Giens, France, October 2001.

Technical and linguistic skills

Systems	DOS, Windows, Linux, Unix, Mac
Programming Framework	Scheme, Pascal, assembly language, C, C++, Java, Caml, Perl, Python, Latex, Matlab, javascript
Control	opencv, ros, visual studio
Languages	cvs, svn, git, bazaar
	fluent in English and Spanish

Activities

2010-2014	Member of the Work Council of Tecnalia R&I, representing the fusionned center Fatronik
2003-2004	Treasurer of ADOC association (PhD students in computer science and signal processing)
1999	Voluntary service within a radio , Fréquence M, Rochefort (17)
1998-1999	Programme responsible of the Rock'n'Soalex festival (60 Keuros)
1997-1998	Supervisor of students events , INSA, Rennes (around 400 people)

Leisure & miscellaneous

- Photo, music, travelling
- Professional website: <http://Anthony.Remazeilles.free.fr>

References

Yvan Measson, head of the Cobic and Teleoperation group, CEA-LIST
e-mail: Yvan.Measson@cea.fr

François Chaumette, Senior Researcher INRIA, responsible for the Lagadic project, IRISA, Rennes
e-mail: Francois.Chaumette@irisa.fr

Patrick Gros, Senior Researcher INRIA, responsible for the Texmex project, IRISA, Rennes
e-mail: Patrick.Gros@irisa.fr