Resume

Nicolas ANDREFF

born May 17, 1972

Full Professor
at Université de Franche-Comté / Institut FEMTO-ST
Head of the Biomedical Micro-/Nano-Robotics group
Besançon, France

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1 Past and current positions

2009-present Professeur des Universités (= Professor) **UFC**, Besançon
Head of MiNaRoB, the Biomedical Micro-/Nano-Robotics group (9 staff, 12 PhDs)
Main topic : Intracorporeal microrobotics
Research institution : FEMTO-ST Institute (UMR CNRS 6174),
Automatic control and Micro-Mechatronics Systems (AS2M) department

2006-2009 MCF-HDR [1] (≈ US Associate Professor) **IFMA**, Clermont-Ferrand
Main topic : High-speed vision-based dynamic control of parallel kinematic mechanisms
Research institution : LASMEA (UMR CNRS 6602), *Robotics and Vision* Group

2000-2006 MCF (≈ US Assistant Professor) **IFMA**, Clermont-Ferrand
Main topic : Vision-based kinematic calibration of parallel kinematic mechanisms
Research institution : LaRAMA/LaMI, *Mechanisms, Machines and Systems* Group

1999-2000 Post-Doc **INRIA**, Grenoble
Topic : Walking pattern generation for the BIP2000 biped robot

1995-1996 Software engineer for the French Army, Paris

1. MCF=Maître de Conférences, see `http://en.wikipedia.org/wiki/Academic_rank_in_France` for details.

2 Education

Research Habilitation (HDR) ***Robotics and Vision*** (Jul. 2006) **UBP**, Clermont-Ferrand

PhD ***Computer Graphics, Vision and Robotics*** (Nov. 1999) **INPG/INRIA**, Grenoble

Topic : Visual servoing from lines and hand-eye calibration

Supervisors : B. Espiau and R. Horaud

DEA (≈ MSc) ***Robotics, Vision and Computer Graphics*** (June 1995) **INPG**, Grenoble

Ingénieur (≈ MSc) ***Computer Science and Applied Maths*** (June 1994) **ENSEEIHT**, Toulouse

Master thesis : Robustness to jitter in real-time control

Supervisor : Pr. B. Wittenmark, Lunds Tekniska Högskola, Sweden

3 Scientific animation

International level :

- Leader of the Topic Group on Miniaturised Robotics at the euRobotics AISBL for the redaction of a European Strategic Research Agenda 2013 and the Multi-Annual Roadmap 2013–2016. Organisation of the annual Miniaturised Robotics workshop at the European Robotics Forum (2013–2018)
- Advisor of the EC DG Connect on Microrobotics 2015
- Steering Committee member for IEEE/ASME AIM 2014
- Local Arrangement Committee member of the 2nd International Workshop on Fundamental Issues and Future Research Directions for Parallel Mechanisms and Manipulators, 2008
- Local Arrangement Committee member of the 9th French-Mexican Summer School on Image and Robotics, 2008
- Organizer (with O. Company, LIRMM) of the Workshop on Next Generation Machines at AIM 2006
- Co-organizer (with P. Martinet, LASMEA) of the Workshop on Visual Servoing at IROS 2002

National level :

- Vice-director of GdR Robotique, the French academic network in robotics, 2019-...
- Elected member of Comité National de la Recherche Scientifique, 2016–2020
- General co-chair of Journées Nationales de la Recherche en Robotique 2017
- Scientific coordinator of the "Methodologies in Robotics" WP of the GdR Rob [2], 2007-2010
- PC member of Journées Nationales de la Recherche en Robotique (JNRR), since 2007
- Local Arrangement Committee member of Journées Nationales de la Recherche en Robotique 2003

Local level :

- Board of Directors and Scientific Committee at AS2M department, FEMTO-ST, since 2009-2018
- Steering Committee of LabEx ACTION, 2012-2018

2. GdR Rob is the French academic and industrial network on robotics

— Creation (2012) and steering of MiNaRoB, the Biomedical Micro-/Nano-Robotics group (9 faculty members, 2 Engineers, 2 Post-Docs, 12 PhD students), 2012-2018
— Member of Biom'@x, the steering committee of biomedical applications at FEMTO-ST, 2011–2014

4 International exchanges

4.1 Visits to foreign research centers

[only **long** stays are listed]

Fraunhofer IITB Karlsruhe Pr. H.-H. Nagel (2 months) July-August 2008
Exchange within the FP4 Esprit Project VIGOR (no. 26247)

Lunds Tekniska Högskola Pr. B. Wittenmark (full academic year) 1993-1994
Student exchange within the Erasmus program

4.2 Visitors

Invited professors : A. Menciassi (SSSA Pisa, Italy, 1 month, 2013), S. Martel (Poly Montréal, Qc, 1 month, 2014)

Faculty members : R. Johansson (Lund TH, Sweden, 2001), A. Robertsson (Lund TH, Sweden, 2003), S. Dubowsky (MIT, USA, 2007), B. Shirinzadeh (Monash Univ., Australia, 2008), L. De Mattos (IIT, Italy, 2013),

Ph.D. students : I. Dressler (Lund, Sweden, 1 week, 2005), S. Bellakehal (Laghout, Algeria, 18 months, 2006), B. Münske (Hannover, Germany, 1 week, 2012), A. Schoob & D. Kundrat (Hannover, 1 week, 2013).

4.3 Erasmus bilateral agreements

IFMA–LTH Sweden (2003–2009), IFMA–Chalmers Sweden (2003–2009), UFC-Uni. Lübeck Germany (2011–2014)

5 Reviewing activity

International funding programmes :

— Evaluation of the H2020 MURAB project, related to Medical Robotics, 2017, 2019
— Remote evaluation of ERC grant proposals (StG 2018, 2020, CoG 2019)
— Participation to the FP7/H2020-ICT "Robotics" project selection panels, 2010, 2015–2017
— Call NSERC Discovery Grant (Canada), 2015
— Call FNRS-MINCyT (Belgium/Argentina mobility), 2013
— Call Grants and Fellowships (FNRS, Belgium), 2012
— Ex-post reviewer of the Région Wallone (Belgium) SENSENDO project, related to Medical Robotics, 2011

French funding programmes :

— Member of the HCERES evaluation panel for LIRMM 2020
— Fondation de Coopération Scientifique Sciences et Technologies pour l'Aéronautique et l'Espace, 2017-2019
— Sollicitations by ANR declined in 2009 (national protest), 2013 and 2019 (conflict of interest) but finally accepted for colleagues' sake (PRC 2018, ASTRID 2020)
— Jeunes Chercheurs/ses (Young Scientist), 2008

— Systèmes Interactifs et Robotique (PSIROB), 2006, 2007

Member of tenure-track selection committees :
Clermont-Ferrand (MCF, 2003-2009), Strasbourg (MCF, 2010, 2015), Besançon (Professor, 2011), Besançon (MCF, 2012, 2013, 2015), Montpellier (MCF, 2013)

Member of 4 Habilitation (HDR) examination boards :
— A. Krupa (2012), S. Dembélé (2013), S. Briot* (2016), D. Daney* (2016)

Member of 32 Ph.D. examination boards :
— in France [3] :

5 HDR :
2012 : A. Krupa (INRIA Rennes), **2016** : S. Briot* (IRCCyN), D. Daney* (INRIA Nice), **2020** : F. Chapelle* (IP), G. Allibert* (I3S)

38 PhD (30 as reviewer) :
2007 I. Herrera* (LAAS) **2008** D. Corbel* (LIRMM)
2010 N. Binaud (IRCCyN), G. Caron* (MIS), J. Hubert* (INRIA Nice), M. Rognant* (INSA Rennes) **2011** N. Riehl (LIRMM) , C. Pacoret* (ISIR) **2012** F. Alkhalil* (LSIIT), A. Gauvin* (PRISME), G. Sartori Natal* (LIRMM), S. Abdelaziz* (LSIIT), L. Rubbert* (LSIIT),
2013 A. Abou Moughlbay* (IRCCyN), T. Gayral* (INRIA Nice)
2014 M. Guillo* (INSA Rennes), L. Magerand* (LASMEA), G. Pagis* (IRCCyN)
2015 V. Rosenzveig* (IRCCyN) **2016** J. Guao (LIRMM), P. Cabras* (ICube), S. Alhomsi (ICube) , S. Vandernotte* (IRCCyN), X. Weber (ICube), M.N. Boushaki* (LIRMM), R. Chellal* (ICube), L. Sadelli* (PRISME) **2017** S. Lanneau* (IMT Nantes), G. Heitz (ICube) , A. Dufaug (SYMME), J. Chevrie* (Lagadic), **2018** D. Six* (LS2N), A. Koessler* (IP) **2019** O. Caravaca Mora* (ICube), Yizhen Lao* (IP), R. Balderas Hill* (LS2N) **2020** ZHU Minglei* (LS2N), P. Thalamy° (FEMTO-ST)

— in Lund (Sweden) : T. Olsson (2007), M. Linderoth (Licentiat, 2011 and PhD, 2013)

Associate editor for international conferences :
ICRA (2013–2016, 2018), ICINCO (2014–2016)

Reviewer for international journals :
IJRR, IEEE ITRA/TRO, IEEE TCST, MechMT, Robotica, UOPT, IJMS, IMechE, ...

Reviewer for international conferences :
ICRA, IROS, ICINCO, AIM, ISOT, ...

6 Funding ID : participation to research projects

— European Programmes

μRALP 2012-2015 (FP7 STREP no. 288663) *Micro-Technologies and Systems for Robot-Assisted Laser Phonomicrosurgery*

Coordinator : IIT Genova - Number of partners : 6 - Budget for FEMTO-ST : 622k€

Role in the project : Initiator of the consortium, Scientific Co-Coordinator of the whole project and Principal Investigator at FEMTO-ST.

NEXT 2006-2009 (FP6 IP no. 0011815) *Next generation production systems* Coordinator : Fatronik - Number of partners : 15 - Budget for LASMEA : 180k€
Role in the project : Scientific key person at LASMEA.

3. * : Rapporteur/Reviewer — ° : Président du jury/Chairman

Rejected applications : Marie Curie IEF (Waiting list, 2009), ERC Starting Grant (2010, 2012), Erasmus Mundus Masters Course (2012)

— National Programmes

ROBOT 2018-2021 (INSERM 17CP069-00) *Robotics and Optical coherence tomography (OCT) for optical BiOpsy in the digestive Tract*

Coordinator : FEMTO-ST - Number of partners : 2 - Total budget : 450k€

Role in the project : Project leader

NEMRO 2015-2018 (ANR-14-CE17-0013) *Microrobotic nasal endoscopy by OCT : impact of smell deficiency on neurodegenerative diseases*

Coordinator : FEMTO-ST - Number of partners : 4 - Total budget : 500k€

Role in the project : Scientific advisor

Labex ACTION 2012-2019 (ANR-11-LABX-0001) *Smart systems embedded into matter*

Coordinator : FEMTO-ST - Number of partners : 3 - Total budget : 10M€/yr

Role in the project : Member of the Executive Committee in quality of Scientific Leader of Demonstrator 4 "Active spectral OCT endomicroscope"

CoGiRo 2010-2013 (ANR-09-SEGI-018) *Control of Giant Robots*

Coordinator : LIRMM - Number of partners : 4 - Budget for LASMEA : 303k€

Role in the project : It should have been Principal Investigator at LASMEA, but this role was reduced to simple participant because of N. Andreff's change of position.

VIRAGO 2007-2011 (ANR JCJC [4] no. 07-JCJC-0175-01) *New perspectives in robotics opened by high-speed vision and rolling shutter*

Coordinator : LASMEA - Number of partners : 1 - Budget : 190k€

Role in the project : Principal Investigator.

MP2 2003-2005 (CNRS ROBEA) *Machines Parallèles et Précision*

Coordinator : LIRMM - Number of partners : 6 - Budget : 30k€

Role in the project : Scientific key person at LASMEA.

MAX 2001-2003 (CNRS ROBEA) *Machines à Architecture compleXe : de la conception à la performance et à l'autonomie*

Coordinator : LIRMM - Number of partners : 6 - Budget : 30k€

Role in the project : Participant and financial manager at LaRAMA.

Rejected applications : ANR Blanc on robotically-steered microcapsules (2011, 2012, 2013, 2014, 2015)

4. ANR JCJC "Young Scientist" ≈ ERC Starting Grant but limited to 4 years and 50k€/year

7 Supervision at graduate and post-graduate levels

Post-doc

Fellow	Subject	Date
B. Dahroug	OCT-based visual servoing	2018–2020
S. Lescano Start-up creation	Medical microrobotics	2015–2017
O. Ait-Aider MCF, Clt-Fd	High-speed vision for dynamic identification	2004–2006

Ph.D. students

Student	Subject	Date	Supervised by
M. Daubresse--Chasle	Endoscopic visual SLAM	2020–...	N. Andreff 100 %
N. Osinde	Robotic optimisation of OCT scanning	2020–...	N. Andreff 100 %
L. Petiet	Transoral robotics	2019–...	N. Andreff 100 %
M. Etievant	Magnetic manipulation	2017–...	N. Andreff (dir.) 30% A. Bolopion 40% S. Régnier 30%
J. Begey	Design and control of a tensegrity mechanism	2017–2020	P. Renaud (dir.) 70% N. Andreff 30%
B. Haydar interrupted	OCT, compressive sensing and visual servoing	2017–2019	N. Andreff (dir.) 30% B. Tamadazte 40% A. Bartoli 30%
A. Benouhiba	Origami-based active structures for Helmholtz resonators and soft robotics	2016–2020	N. Andreff (dir.) 30% K. Rabenorosoa 40% M. Ouisse 30%
Q. Peyron	Magnetic concentric tube robots	2016–2019	N. Andreff (dir.) 30% K. Rabenorosoa 40% P. Renaud 30%
G. Cottez interrupted	OCT, compressive sensing and visual servoing	2015–2016	N. Andreff (dir.) 30% B. Tamadazte 40% S. Chrétien 30%
B. Dahroug	Microrobot-assisted cholesteatoma surgery	2014–2018	N. Andreff (dir.) 30% B. Tamadazte 50% L. Tavernier 10% S. Weber 10%
A. Oulmas	Design and control of multi-flagella magnetic capsules	2014–2018	S. Régnier (dir.) 70% N. Andreff 30%
M. Ourak	OCT-based visual servoing	2013–2016	N. Andreff (dir.) 30% B. Tamadazte 70%
M.T. Chikhaoui	Embedded actuation on deformable tube : application to continuum robots continus for active endomicroscopes	2013–2016	N. Andreff (dir.) 30% K. Rabenorosoa 70%

S. Lescano Post-Doc Entrepreneur Besançon	Design, Fabrication and Control of a Microrobot for Laser Phonomicrosurgery	2012–2015	N. Andreff (dir.) 50% M. Rakotondrabe 50%
B. Véron Post-Doc Grenoble	Multi-Mobile Coil Magnetic Manipulation of Endoscopic Capsules	2011–2014	N. Andreff (dir.) 40% A. Hubert 30% J. Abadie 30%
T. Xu Post-doc Chinese University of Hong Kong	Micro-helical swimmer steering with rotating magnetic fields	2010–2014	S. Régnier (dir.) 30% G. Hwang 30% N. Andreff 30%
E. Özgür Post-doc Clermont-Ferrand	From Lines To Dynamics of Parallel Robots	2008–2012	N. Andreff (dir.) 70% P. Martinet 30%
A. Benzerrouk	Hybrid control architecture for multi-robot systems : Application to multi-robot platoon navigation	2007–2011	N. Andreff (dir.) 30% L. Adouane 40% P. Martinet 30%
R. Dahmouche MCF Besançon	Dynamic control of PKM using rolling shutter cameras	2006–2010	N. Andreff (dir.) 40% Y. Mezouar 30% P. Martinet 30%
F. Paccot PRAG Clermont-Ferrand	Dynamic control of PKM	2005–2008	N. Andreff 70% P. Martinet (dir.) 30%
T. Dallej	Visual servoing of PKM through leg observations	2004–2007	N. Andreff 70% P. Martinet (dir.) 30%
H. Hadj-Abdelkader MCF Evry	Omnidirectional visual servoing	2003–2006	P. Martinet (dir.) 30% Y. Mezouar 40% N. Andreff 30%
P. Renaud Professor Strasbourg	Kinematic calibration of PKM	2000–2003	G. Gogu (dir.) 20% P. Martinet 30% N. Andreff 50%

Master

Student	Subject	Date
N. Osinde	Magnetic manipulator calibration	2020
J. Ka'Pesha Odira	Laser steering through a mirror	2020
K. Mwongera	Vision-bsed modelling of a Snellson cross	2020
I. Tchouatat Kepseu	Design of a variable stiffness hexapod	2020
G. Iraci	Visual servoing using OCT volumes	2020
C.M. Gianfreda	Multi-mobile coil manipulation	2017
V. Lehoussel	Mechatronic design of a magnetic manipulation system with mobile coils	2011
B. Véron	Simulation and control of a magnetic manipulation system with mobile coils	2011
E. Prachittham	Calibration of endoscopic capsule localization systems	2011
F. Paccot	Dynamic control of Isoglide4-T3R1	2005
A. Marchadier	Visual servoing of the Gough-Stewart platform through leg observations	2004
J. Yun	Vision-based kinematic calibration of PKM	2004
A. Sahli	Vision-based calibration of H4	2003
S. Ronchi	Inertial parameters identification for manipulators	2002
A. Abadja	Inertial parameters identification for manipulators	2002
R. Lenain	Automatic guidance of farming vehicles	2002

8 Publications

Period	Books	Book chapters	International Journals	International Conferences	International Workshops	Others
1996–2000				3	1	2
2001–2009		2	13	38	3	10
2010–2013	1	3	12	31	11	3
2014–2019		2	21	42	1	7
Total	1	3	39	96	15	21

– Invited seminars

— 9th French-Mexican Summer School on Image and Robotics, Clermont-Ferrand, 2008
— Field and Service Research Center (S. Lee) at Sunkyunkwan University, South Korea, 2007
— Robotics lab (F.C. Park) at Seoul National University, South Korea, 2007
— Department of Automatic control, Lund, Sweden, 2007, 2011
— EURON Summer School on Visual Servoing, Benicasim, Spain, 2002

– Prizes and awards

— Grand Prix Scientifique 2018 awarded by Fondation Ch. Defforey – Institut de France (`youtube.com/watch`
— M.T. Chikhaoui received (*ex aequo*) the 2016 Best Robotics PhD award from GdR Robotique
— Best Poster Presentation award, Hamlyn Symposium on Medical Robotics, London, 2017
— Innovation Award at MedTec, the International Industrial Fair on Medical Technologies, Besançon, 2015

— Honorable Mention from the jury of the Microns d'Or prize at MICRONORA, the International Industrial Fair on Microtechnologies, Besançon, 2014
— Finalist to the Best Paper Award at the International Conference of Advanced Intelligent Mechatronics, Wollongong, 2013, for the paper [CI_54]
— Best Theoretical Research Paper Award at the European Conference on Mechanism Science, Santander, 2012 for the paper [CI_48]
— Honorable Mention Paper Award at the European Conference on Computer Vision, Graz, 2006 (acceptance rate $< 4\%$ for oral presentations) for the oral presentation [CI_19].

Books

[B_1] M. Gauthier, N. Andreff, and E. Dombre. *Intracorporeal robotics : from milliscale towards nanoscale.* Wiley, May 2014. ISBN : 978-1-84821-371-5.

Book chapters

[BC_1] B. Véron, A. Hubert, J. Abadie, and N. Andreff. Magnetic manipulation with several mobile coils towards gastrointestinal capsular endoscopy. In F. Viadero and M. Ceccarelli, editors, *New Trends in Mechanism and Machine Science. Theory and Applications in Engineering.*, pages 681–690. Springer, 2012. Extension of the EuCoMeS 12 paper.

[BC_2] B. Dahroug, B. Tamadazte, and N. Andreff. Task controller for performing remote centre of motion. In *Lecture Notes in Electrical Engineering*. Springer, 2016. Extension of the ICINCO 16 paper.

[BC_3] M. Ourak, B. Tamadazte, N. Andreff, and E. Marchand. Multimodal image registration and visual servoing. In *Informatics in Control, Automation and Robotics 12th International Conference, ICINCO 2015 Colmar.*, pages 1–18. Springer, jul 2016. Extension of the ICINCO 16 paper.

International journals

[RI_1] N. Andreff, R. Horaud, and B. Espiau. Robot hand-eye calibration using structure from motion. *International Journal of Robotics Research*, 20(3) :228–248, March 2001.

[RI_2] N. Andreff, B. Espiau, and R. Horaud. Visual servoing from lines. *International Journal of Robotics Research*, 21(8) :679–700, August 2002.

[RI_3] N. Andreff, P. Renaud, P. Martinet, and F. Pierrot. Vision-based kinematic calibration of an H4 parallel mechanism : practical accuracies. *Industrial Robot : An international journal*, 31(3) :273–283, May 2004.

[RI_4] C. Azevedo, N. Andreff, and S. Arias. BIPedal walking : from gait design to experimental analysis. *Mechatronics*, 14(6) :639–665, 2004.

[RI_5] P. Renaud, N. Andreff, Ph. Martinet, and G. Gogu. Kinematic calibration of parallel mechanisms : A novel approach using legs observation. *IEEE Transactions on Robotics*, 21(4) :529–538, August 2005.

[RI_6] N. Andreff and P. Martinet. Unifying kinematic modeling, identification and control of a Gough-Stewart parallel robot into a vision-based framework. *IEEE Transactions on Robotics*, 22(6) :1077–1086, December 2006.

[RI_7] D. Daney, N. Andreff, G. Chabert, and Y. Papegay. Interval method for calibration of parallel robots : A vision-based experimentation. *Mechanism and Machine Theory, Special Issue on CK 2005, International Workshop on Computational Kinematics*, 41(8) :929–944, 2006.

[RI_8] P. Renaud, N. Andreff, J.-M. Lavest, and M. Dhome. Simplifying the kinematic calibration of parallel mechanisms using vision-based metrology. *IEEE Transactions on Robotics*, 22(1) :12–22, February 2006.

[RI_9] P. Renaud, A. Vivas, N. Andreff, P. Poignet, P. Martinet, F. Pierrot, and O. Company. Kinematic and dynamic identification of parallel mechanisms. *Control Engineering Practice*, 14(9) :1099–1109, 2006.

[RI_10] N. Andreff, T. Dallej, and P. Martinet. Image-based visual servoing of a Gough-Stewart parallel manipulator using leg observations. *International Journal of Robotics Research. Special Issue on Vision and Robotics – Joint with the International Journal on Computer Vision*, 26(7) :677–687, July 2007.

[RI_11] N. Andreff and P. Martinet. Vision-based self-calibration and control of parallel kinematic mechanisms without proprioceptive sensing. *Intelligent Service Robotics*, 2(2) :71–80, 2009.

[RI_12] F. Paccot, N. Andreff, and P. Martinet. A review on dynamic control of parallel kinematic machines : theory and experiments. *International Journal of Robotics Research*, 28(3) :395–416, March 2009.

[RI_13] O. Tahri, Y. Mezouar, N. Andreff, and P. Martinet. Omnidirectional visual-servo of a Gough-Stewart platform. *IEEE Transactions on Robotics*, 25(1) :178–184, February 2009.

[RI_14] S. Bellakehal, N. Andreff, Y. Mezouar, and M. Tadjine. Force/position control of parallel robots using exteroceptive pose measurements. *Meccanica*, 46 :195–205, 2011.

[RI_15] S. Bellakehal, N. Andreff, Y. Mezouar, and M. Tadjine. Vision/force control of parallel robots. *Mechanism and Machine Theory*, 46(10) :1376–1395, oct 2011.

[RI_16] R. Dahmouche, N. Andreff, Y. Mezouar, O. Ait-Aider, and P. Martinet. Dynamic visual servoing from sequential regions of interest acquisition. *International Journal of Robotics Research*, 31(4) :520–537, April 2012.

[RI_17] T. Xu, G. Hwang, N. Andreff, and S. Régnier. Modeling and swimming property characterizations of scaled-up helical microswimmers. *IEEE/ASME Transactions on Mechatronics*, 19(3) :1069–1079, 2013.

[RI_18] E. Özgür, N. Andreff, and P. Martinet. Linear dynamic modeling of parallel kinematic manipulators from observable kinematic elements. *Mechanism and Machine Theory*, 69 :73–89, 2013.

[RI_19] K. Rabenorosoa, B. Tasca, A. Zerbib, P. Rougeot, N. Andreff, and P. Eakkachai. Squipabot : a mesoscale parallel robot for a laser phonosurgery. *International Journal of Optomechatronics*, 9(4) :310–324, June 2015.

[RI_20] A. Schoob, D. Kundrat, L. Kleingrothe, L. A. Kahrs, N. Andreff, and T. Ortmaier. Tissue surface information for intraoperative incision planning and focus adjustment in laser surgery. *International Journal of Computer Assisted Radiology and Surgery*, 10(2) :171–181, 2015.

[RI_21] J.A. Séon, B. Tamadazte, and N. Andreff. Decoupling path following and velocity profile in vision-guided laser steering. *IEEE Transactions on Robotics*, 31(2) :280–289, April 2015.

[RI_22] T. Xu, G. Hwang, N. Andreff, and S. Régnier. Planar path following of 3d steering scaled-up helical microswimmers. *IEEE Transactions on Robotics*, 31(1) :117–127, 2015.

[RI_23] Nicolas Andreff and Brahim Tamadazte. Laser steering using virtual trifocal visual servoing. *International Journal of Robotics Research*, 35(6) :672–694, May 2016.

[RI_24] Mohamed Taha Chikhaoui, Kanty Rabenorosoa, and Nicolas Andreff. Kinematics and performance analysis of a novel concentric tube robotic structure with embedded soft microactuation. *Mechanism and Machine Theory*, 104 :234–254, 2016.

[RI_25] P. Eakkachai, K. Rabenorosoa, M. Rakotondrabe, and N. Andreff. Scanning micromirror platform based on MEMS technology for medical application. *Micromachines*, 7(2) :1–29, February 2016.

[RI_26] T. Xu, G. Hwang, N. Andreff, and S. Régnier. Influence of geometry on swimming performance of helical swimmers using DoE. *Journal of Micro-Bio Robotics*, 11(1) :57–66, 2016.

[RI_27] R. Renevier, B. Tamadazte, K. Rabenorosoa, N. Andreff, and L. Tavernier. Endoscopic laser surgery : Design, modeling and control. *IEEE Transactions on Mechatronics*, 22(1) :99–106, February 2017.

[RI_28] Mohamed Taha Chikhaoui, Amine Benouhiba, Patrick Rougeot, Kanty Rabenorosoa, Morvan Ouisse, and Nicolas Andreff. Developments and control of biocompatible conducting polymer for intracorporeal continuum robots. *Annals of biomedical engineering*, 46(10) :1511–1521, 2018.

[RI_29] Bassem Dahroug, Brahim Tamadazte, Stefan Weber, Laurent Tavernier, and Nicolas Andreff. Review on otological robotic systems : Toward microrobot-assisted cholesteatoma surgery. *IEEE reviews in biomedical engineering*, 11 :125–142, 2018.

[RI_30] T. Dallej, N. Andreff, and P. Martinet. Contribution to a generic modeling and vision-based control of a broad class of fully parallel robots. *Robotica*, 36(12) :1874–1896, 2018.

[RI_31] C. Girerd, T. Lihoreau, K. Rabenorosoa, B. Tamadazte, M. Benassarou, L. Tavernier, L. Pazart, E. Haffen, N Andreff, and P. Renaud. In vivo inspection of the olfactory epithelium : Feasibility of robotized optical biopsy. *Annals of Biomedical Engineering*, 2018.

[RI_32] Andrey V Kudryavtsev, Mohamed Taha Chikhaoui, Aleksandr Liadov, Patrick Rougeot, Fabien Spindler, Kanty Rabenorosoa, Jessica Burgner-Kahrs, Brahim Tamadazte, and Nicolas Andreff. Eye-in-hand visual servoing of concentric tube robots. *IEEE Robotics and Automation Letters*, 3(3) :2315–2321, 2018.

[RI_33] A. Oulmas, N. Andreff, and S. Régnier. 3D closed-loop swimming at low Reynolds numbers. *International Journal of Robotics Research*, 37(11) :1359–1375, 2018.

[RI_34] Q. Peyron, Q. Boehler, K. Rabenorosoa, B. J. Nelson, Pierre Renaud, and N. Andreff. Kinematic analysis of magnetic continuum robots using continuation method and bifurcation analysis. *IEEE Robotics and Automation Letters*, 3(4) :3646–3653, 2018.

[RI_35] Benoit Rosa, Bassem Dahroug, Brahim Tamadazte, Kanty Rabenorosoa, Patrick Rougeot, Nicolas Andreff, and Pierre Renaud. Online robust endomicroscopy video mosaicking using robot prior. *IEEE Robotics and Automation Letters*, 3(4) :4163–4170, 2018.

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