Christos Bergeles, Ph.D. - Curriculum Vitae

Translational Imaging Group
Wolfson House, 314 Level 3
University College London
United Kingdom

email: c.bergeles@ucl.ac.uk
web: http://christos.bergeles.net

Education

D. Sc. ETH Zurich (Dec. 2006 - Mar. 2011)
Institute of Robotics and Intelligent Systems, ETH Zurich, 2011
Topic: "Visually Servoing Wireless Untethered Intraocular Microrobots"
Advisor: Prof. Bradley J. Nelson

Diploma (M. Sc.) NTUA (First Class Honors, 9.52/10.0) (Oct. 2001 - Jul. 2006)
Electrical and Computer Engineering School, National Technical University of Athens (NTUA), 2006
Topic: "Tracking of Moving Objects with Emphasis on Human Gestures"
Advisor: Prof. Petros Maragos

Professional Experience

Lecturer (Assistant Professor), Sept 2015 - now
Translational Imaging Group, Dep. Medical Physics and Bioengineering, University College London, United Kingdom
- Concentric tube robots for vitreoretinal surgery.
- 3D ophthalmoscopic imaging systems.
- Ph. D. and M. Res. level student supervision.

Hamlyn Fellow, May 2013 - Aug 2015
Hamlyn Centre for Surgical Robotics, Imperial College London, United Kingdom
Advisor: Prof. Guang-Zhong Yang

- Concentric tube robots for vitreoretinal surgery.
- A "Surgical GPS" for transanal endoscopic microsurgery.
- Ph. D. and M. Res. level student supervision.

Co Founder, Technology Manager, Sep. 2013 - now
Respi :: The smartphone spirometer.

- Engineering team management.
- Device prototyping.

Postdoctoral Research Fellow, Jan. 2012 - Apr. 2013
Department of Cardiovascular Surgery, Boston Children's Hospital, Harvard, MA, USA
Advisor: Prof. Pierre E. Dupont

- Imaging and control of MRI-powered robots.
- Design optimization of concentric tube robots for minimally-invasive surgery.

Postdoctoral Research Associate, Apr. 2011 - Dec. 2011
Institute of Robotics and Intelligent Systems, ETH Zurich, Switzerland
Advisor: Prof. Bradley J. Nelson

- Coordination of clinicians and engineers for animal trials with intraocular microrobots.
- B. Sc., M. Sc. and Ph. D. level student supervision.

Awards and Honors

Best Application Paper Award, 2015
IEEE Trans. Automation Science and Engineering.

Best Orally Presented Paper Finalist, 2014
The Hamlyn Symposium on Medical Robotics, United Kingdom.

Best Student Paper Finalist, 2014
Charalampos Michailidis, ICST Int. Conf. Wireless Mobile Communication and Healthcare.

Fight for Sight Award, 2014
Fight for Sight Foundation and Royal College of Ophthalmologists, United Kingdom.

2^{nd} Place, SFEE Innovation Project, 2013
SFEE (Hellenic Association of Pharmaceutical Companies), Industry Disruptors.

Best Medical Robotics Paper Award Finalist, 2013
IEEE Int. Conf. Robotics and Automation (ICRA).

Best Medical Robotics and CAI Systems Paper Award Finalist, 2011
Int. Conf. Medical Image Analysis and Computer-Assisted Interventions (MICCAI).

Best Computer Vision Paper Finalist, 2011
IEEE Int. Conf. Robotics and Automation (ICRA).

Gold Medal, 2009
Nanogram League of Robocup, Austria.

Best Conference Paper Finalist, 2008
IEEE RAS/EMBS Int. Conf. Biomedical Robotics and Biomechatronics (BioRob).

Best Student Paper Finalist, 2008
IEEE RAS/EMBS Int. Conf. Biomedical Robotics and Biomechatronics (BioRob).

Academic Performance Award, 2008
Awarded by the Greek Chamber of Engineers for academic performance between 2001 - 2006.

Best Presentation Award, 2007
Int. Genetically Engineered Machines Competition (iGEM).

Gold Medal, 2007
Int. Genetically Engineered Machines Competition (iGEM).

DAAD Scholar, 2005
German Academic Exchange Service Scholarship for summer internship at TU Berlin.

Chr. Papakyriakopoulos Prize, 2002, 2003
Awarded by the Electrical and Computer Engineering School of NTUA for performance in mathematics.

N. Kritikos Award, 2002, 2003
Awarded by the Electrical and Computer Engineering School of NTUA for performance in mathematics.

State Scholarship Foundation (IKY) Award, 2002
Awarded by the State Scholarship Foundation for excellent performance.

Valedictorian, 2001
Awarded by the Electrical and Computer Engineering School of NTUA for academic performance.

Best Student Project Award, 2000.
Awarded by the Center of Renewable Energy Sources, Greece, for project on "Reducing Energy Consumption in School Buildings".

Outstanding National-wide Performance Award, 2000.
Awarded by the Hellenic Ministry of Education for outstanding national-wide performance at the university entrance examinations.

Funding

EPSRC Winter School for Imaging and Vision in Robotic Surgery, 2015
EPSRC/Imperial College London, 20k GBP.

A Concentric Tube Robot for Deep Cochlear Implant Insertion, 2014
NIHR Imperial Biomedical Research Centre, 39k GBP.

Respi: The Smartphone Spirometer, 2014
DreamIt Health Baltimore, 40k USD.

Respi: The Smartphone Spirometer, 2013
SFEE (Hellenic Association of Pharmaceutical Companies), Industry Disruptors, 15k EU.

MRI-Powered Millirobot Swarms for Neurosurgery, 2013
Investigator, co-author in preparation (PI: Pierre E. Dupont), Wyss Institute, 100k USD.

NSF Travel Award, 2012
IEEE Int. Conf. Robotics and Automation (ICRA), 0.8k USD.

X-Ray and Fluorescence-Based Magnetic Micro/Nanorobot Control, 2011
Investigator, co-author (PI: Bradley J. Nelson), Swiss Academy of Engineering Sciences, Transfer Grant, 16k CHF.

ETH Travel Award, 2010
IEEE Int. Conf. Robotics and Automation (ICRA), 1.5k CHF.

Media Publicity

fightforsight.org.uk: An eye for robotics leads to the 2014 Fight for Sight Award, July 2014.

MIT Technology Review: Greece's Startups on The Rise: Tech entrepreneurs in Greece's burgeoning starup scene push back against a bleak narrative, May 19th 2015.

To Vima: Pneumo: Measuring breathing through the smartphone, Nov. 2013. [in Greek]
("To Vima" is one of the two highest quality Sunday journals in Greece).

Robohub.org: Minimally-invasive eye-surgery on the horizon, June 26th 2013.

30 Meres: Christos Bergeles: From Cholargos' public schools to the labs of Harvard, 2012. [in Greek]

RSI LA1: Mi si e ristetto il robot, 2012. [in Italian]

Reuters: Tiny robot operates inside the eye, 2011.

20 Minuten: Klein, aber oho: dieser Roboter gehts in Auge, 2011. [in German]

To Vima: Little magnets grant vision, 2011. [in Greek]

New Scientist: Drug-carrying robot roams through eye, Mar. 10th, 2011.

PBS NOVA: Making Stuff Smaller, 2011.

Discovery Channel: How microrobots could prevent blindness, 2010.

Science et Vie Junior: Des microrobots dans le corps humain, 2010. [in French]

New Scientist: Rise of the Medirobots, 2009.

ETH Life: MagMite outperforms the competition, 2009.

Nouvo, TSR: Cherie, jai retrechi le medecin!, 2008. [in French]

The Economist: Swallow the surgeon, 2008.

ETH Life: Gold fuer gebildete Bakterien, 2007. [in German]

Teaching Experience

Student Mentoring, 2013 - now
The Hamlyn Centre, Imperial College London, United Kingdom

- M. Res. level: Fangyu Lin, Malindie Sugathapala.
- Ph. D. level: Petros Giatagannas, Alessandro Vandini, Konrad Leibrandt.

Student Mentoring, 2006 - 2011
Institute of Robotics and Intelligent Systems, ETH Zurich, Switzerland

- B. Sc. level: Yi Chou Han, Fabian Boesch, Malcolm Gibson, Mourad Ben Ayed.
- M. Sc. level: Hamal Marino, Kamran Shamaei, Georgios Fagogenis.
- Ph. D. level: Juho Pokki.

Teaching Assistant, 2014 - now
Hamlyn Centre for Robotic Surgery, Imperial College London, United Kingdom

"Medical Robotics and Instrumentation" course (DH parameters, dynamics, robot control etc.):
- Prepared tutorials and exercise sessions.
- Held regular office hours and advised students.
- Gave multiple lectures replacing the professor (2-3 per semester).

Teaching Assistant, 2007 - 2010
Institute of Robotics and Intelligent Systems, ETH Zurich, Switzerland

"Theory of Robotics and Mechatronics" course (DH parameters, screw theory etc.):
• Prepared tutorials and exercise sessions.
• Prepared matlab code samples and visualizations of screw theory principles.
• Prepared and graded exams.
• Held regular office hours and advised students.
• Trained new teaching assistant in screw theory.
• Gave multiple lectures replacing the professor (2-3 per semester).

"Advanced Robotics and Mechatronics" course (magnetic microrobot design and control):
• Co-team leader for participation at Robocup 2009 (microrobotic league).
• Introduced students to C++ principles, code versioning and software development.
• Responsible for software development.

Laboratory Assistant, 2009
Institute of Robotics and Intelligent Systems, ETH Zurich, Switzerland
Advisor: Prof. Bradley J. Nelson

"Introduction to Robotics and Mechatronics" course (Linux-based 3DOF robot control etc.):
• Assisted students in code development and debugging.

Laboratory Assistant, 2003 - 2005
School of Electrical and Computer Engineering, National Technical University of Athens, Greece
Advisor: Prof. Nikolaos Papaspyrou

"Programming Techniques" course (C, trees, stacks, heaps, algorithm complexity etc.):
• Held lab sessions and tutorials for students.
• Advised students offline.
• Supervised exams.

"Introduction to Programming" course (Pascal, functional programming, computation etc.):
• Held lab sessions and tutorials for students.
• Advised students offline.
• Supervised exams.

Professional Activities and Memberships

Editorial and Chairing
• Associate Editor, IEEE Int. Conf. Robotics and Automation (ICRA), 2012, 2014, 2015, 2016.
• Session co-chair for "Medical Robots I", IEEE Int. Conf. Intelligent Robots and Systems (IROS), 2013.
• Organiser of "Micro-robotics and Design Challenges" Workshop, Hamlyn Symposium on Medical Robotics, 2014 (with G.-Z. Yang, H. Ip, and H. Marcus).
• Organiser of "Advances in Flexible Access Robots for Surgical Interventions" Workshop, IEEE Int. Conf. Robotics and Automation (ICRA), 2014 (with G.-Z. Yang, P. E. Dupont, K. Ikuta, and S.-L. Lee).
• Organiser of "Magnetically Actuated Multiscale Medical Robots" Workshop, IEEE Int. Conf. Intelligent Robots and Systems (IROS), 2012 (with P. E. Dupont, and P. Vartholomeos).
• Organiser of "Research and Networking Workshop", NCCR Co-Me, 2010 (with S. Hirsch).
• Board Member: IEEE NTUA Student Branch, 2005 - 2006.

Reviewer
• Robotica.
• IEEE Trans. Robotics.
• IEEE Trans. Mechatronics.
• IEEE Trans. Medical Imaging.
• IEEE Trans. Biomedical Engineering.

- J. Computer Science and Systems Biology.
- IEEE Int. Conf. Robotics and Automation (ICRA).
- IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS).
- IEEE RAS/EMBS Int. Conf. Biomedical Robotics and Biomechatronics (BioRob).
- Int. Conf. Medical Image Computing and Computer-Assisted Intervention (MICCAI).
- IEEE/ASME Int. Conf. Advanced Robotics and Mechatronics (AIM).
- Hamlyn Symposium on Medical Robotics.

Member
- IEEE Robotics and Automation Society, 2004 - now.
- IEEE Engineering in Medicine and Biology Society, 2006 - now.

Invited Talks

- "Snakes and Cameras for Ophthalmology", Fight for Sight, (invited by Dr. Dolores Conroy), 2015.
- "Flexible Access Surgery Using Concentric Tube Robots", University of Basel, Department of Biomedical Engineering (invited by Prof. Philip Cattin), 2015.
- "Designing Flexible Robots for Minimally Invasive Surgery", KU Leuven, Faculty of Engineering Technology (invited by Prof. Jan Ivens), 2014.
- "Incorporating Surgical Task Information in Robot Development", Hamlyn Symposium, Workshop on Surgical Workflow Analysis (invited by Dr. Stamatia Giannarou), 2013.
- "Towards MRI-Powered and Controlled Medical Devices", Harvard University, Biorobotics Lab (invited by Prof. Robert Howe), 2013.
- "Fantastic Voyage: Intracorporeal MRI-Powered Robots", Boston Children's Hospital, Department of Cardiovascular Surgery, 2012.
- "Robots and Algorithms for Minimally Invasive Surgical Interventions", Imperial College, Hamlyn Centre (invited by Prof. Guang-Zhong Yang), 2012.
- "Magnetic Microrobots for Minimally Invasive Interventions", Northeastern University, Ph. D. Student Seminar (invited by Mr. Dimitris Kanoulas), 2012.
- "Visually Servoing Wireless Magnetic Intraocular Microrobots", Boston Children's Hospital, Pediatric Cardiac Bioengineering Lab (invited by Prof. Pierre E. Dupont), 2011.
- "Visually Servoing Wireless Magnetic Intraocular Microrobots", Johns Hopkins University, Computational Interaction & Robotics Lab (invited by Prof. Gregory Hager), 2011.
- "Visually Servoing Wireless Magnetic Intraocular Microrobots", Microsoft Research Cambridge, Machine Learning Laboratory (invited by Dr. Antonio Criminisi and Dr. Abigail Sellen), 2011.

Academic Publications

International Journals

1. C. Bergeles, A. Gosline, N. Vasilyev, P. Codd, P. J. del Nido, and P. E. Dupont, "Concentric tube robot design and optimization based on task and anatomical constraints," *IEEE Trans. Robotics*, vol. 31, no. 1, pp. 67–84, 2015.
2. O. Felfoul, A. Becker, C. Bergeles, and P. E. Dupont, "Achieving commutation control of an MRI-powered robot actuator," *IEEE Trans. Robotics*, vol. 31, no. 2, pp. 387-399, 2015.
3. C. Bergeles, and G.-Z. Yang, "From passive tool holders to microsurgeons: safer, smaller, smarter surgical robots," *IEEE Trans. Biomedical Engineering*, vol. 61, no. 5, pp. 1565-1576, 2014.
4. H. Marino, C. Bergeles (co-first), and B. J. Nelson, "Robust electromagnetic control of microrobots under force and localization uncertainties," *IEEE Trans. Automation Science and Engineering*, vol. 11, no. 1, pp. 310–316, 2014, **Best Application Paper Award**.
5. P. Vartholomeos, C. Bergeles, L. Qin, and P. E. Dupont, "An MRI-powered and controlled actuator technology for tetherless robotic interventions,", Int. J. Robotics Research, vol. 32, no. 13, pp. 1536-1552, 2013.

6. F. Ulrich, C. Bergeles, J. Pokki, O. Ergeneman, S. Erni, G. Chatzipirpiridis, S. Pané, C. Framme, and B. J. Nelson, "Mobility experiments with microrobots for minimally invasive intraocular surgery," Investigative Ophthalmology and Visual Science, vol. 54, no. 4, pp. 2853-2863, 2013.
7. C. Bergeles, B. E. Kratochvil, and B. J. Nelson, "Visually servoing magnetic intraocular microrobots," *IEEE Trans. Robotics*, vol. 28, no. 4, pp. 798–809, 2012.
8. C. Bergeles, K. Shamaei, J. J. Abbott, and B. J. Nelson, "Single-camera focus-based localization of intraocular devices," *IEEE Trans. Biomedical Engineering*, vol. 57, no. 8, pp. 2064–2074, 2010.
9. L. Zhang, J. J. Abbott, K. Peyer, B. E. Kratochvil, H. Zhang, C. Bergeles, and B. J. Nelson, "Characterizing the swimming properties of artificial bacterial flagella," *Nano Letters*, vol. 9, no. 10, pp. 3663–3667, 2009.

Refereed Full Paper Conference Publications

1. C. Bergeles, P. Berthet-Rayne, P. McCormac, L. C. Garcia-Peraza-Herrera, K. Onyenso, F. Cao, K. Vyas, M. Berthelot, and G.-Z. Yang, "Accessible digital ophthalmoscopy based on liquid-lens technology," *Int. Conf. Medical Image Computing and Computer Assisted Inteverntion (MICCAI)*, pp. 571–578, 2015.
2. F.-Y. Lin, C. Bergeles, and G.-Z. Yang, "Biometry-based concentric tubes robot for vitreoretinal surgery," *IEEE Engineering in Medicine and Biology Conf. (EMBC)*, 2015, **in press**.
3. K. Leibrandt, C. Bergeles, and G.-Z. Yang, "On-line collision-free inverse kinematics with frictional active constraints for effective control of unstable concentric tube robots," *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, 2015, **in press**.
4. A. Vandini, C. Bergeles, F.-Y. Lin, and G.-Z. Yang, "Intraoperative vision-based shape sensing of concentric tube robots," *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, 2015, **in press**.
5. M. Power, H. Rafii-Tari, C. Bergeles, V. Vitiello, and G.-Z. Yang, "A cooperative control framework for haptic guidance with bimanual surgical tasks based on learning from demonstration," *IEEE Int. Conf. Robotics and Automation (ICRA)*, pp. 5330–5337, 2015.
6. C. Bergeles, P. Pratt, R. Merrifield, A. Darzi, and G.-Z. Yang, "Multi-view stereo reconstruction and advanced navigation for transanal endoscopic microsurgery," *Int. Conf. Medical Image Computing and Computer Assisted Intervention (MICCAI)*, pp. 332–339, 2014.
7. P. Pratt, C. Bergeles, A. Darzi, and G.-Z. Yang, "Practical intraoperative stereo camera calibration," *Int. Conf. Medical Image Computing and Computer Assisted Intervention (MICCAI)*, pp. 667–675, 2014.
8. C. Michailidis, I. Smanis (co-first), K. Stamatis, C. Bergeles, and A. Kouris, "Development of a smartphone-enabled spirometer for personalised respiratory health", *ICST Int. Conf. Wireless Mobile Communication and Healthcare*, pp. 66–70, 2014, **Best Student Paper Finalist**.
9. C. Bergeles, and P. E. Dupont, "Planning stable paths for concentric tube robots," *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, pp. 3077–3082, 2013.
10. C. Bergeles, P. Vartholomeos, L. Qin, and P. E. Dupont, "Closed-loop commutator control of an MRI-powered actuator," *IEEE Int. Conf. Robotics and Automation (ICRA)*, pp. 690–695, 2013, **Best Medical Robotics Paper Finalist**.
11. C. Bergeles, L. Qin, P. Vartholomeos, P. E. Dupont, "Tracking and position control of an MRI-powered needle-insertion robot," *IEEE Engineering in Medicine and Biology Conf. (EMBC)*, pp. 928–931, 2012.
12. J. Pokki, O. Ergeneman, C. Bergeles, H. Torun, and B. J. Nelson, "Localized viscoelasticity measurements with untethered intravitreal microrobots," *IEEE Engineering in Medicine and Biology Conf. (EMBC)*, pp. 2813–2816, 2012.
13. H. Marino, C. Bergeles, and B. J. Nelson, "Robust $\mathcal{H}_\infty$ control for electromagnetic steering of microrobots," *IEEE Int. Conf. Robotics and Automation (ICRA)*, pp. 2498–2503, 2012.

14. C. Bergeles, M. P. Kummer, B. E. Kratochvil, C. Framme, and B. J. Nelson, "Steerable intravitreal inserts for drug delivery: *in vitro* and *ex vivo* mobility experiments," *Int. Conf. Medical Image Computing and Computer Assisted Intervention (MICCAI)*, pp. 33–40, 2011, **Best Medical Robotics and CAI Systems Award Finalist**.
15. O. Ergeneman, G. Chatzipirpiridis, S. Pané, G. A. Sotiriou, C. Bergeles, and B. J. Nelson, "Wireless microrobotic oxygen sensing for retinal hypoxia monitoring," *ICST Int. Conf. Wireless Mobile Communication and Healthcare*, 2011.
16. C. Bergeles, B. E. Kratochvil, and B. J. Nelson, "Model-based localization of intraocular microrobots for wireless electromagnetic control," *IEEE Int. Conf. Robotics and Automation (ICRA)*, pp. 2617–2622, 2011, **Best Vision Paper Finalist**.
17. C. Bergeles, K. Shamaei, J. J. Abbott, and B. J. Nelson, "Wide-angle intraocular imaging and localization," *Int. Conf. Medical Image Computing and Computer Assisted Intervention (MICCAI)*, pp. 540–548, 2009.
18. C. Bergeles, K. Shamaei, J. J. Abbott, and B. J. Nelson, "Wide-angle localization of intraocular devices from focus," *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, pp. 4523–4528, 2009.
19. C. Bergeles, G. Fagogenis, J. J. Abbott, and B. J. Nelson, "Tracking intraocular microdevices based on colorspace evaluation and statistical color/shape information," *IEEE Int. Conf. Robotics and Automation (ICRA)*, pp. 3934–3939, 2009.
20. C. Bergeles, K. Shamaei, J. J. Abbott, and B. J. Nelson, "On imaging and localizing untethered intraocular devices with a stationary camera," *IEEE Int. Conf. Biomedical Robotics and Biomechatronics (BioRob)*, pp. 489–494, 2008, **Best Conference Paper Finalist, Best Student Paper Finalist**.

Refereed Abstract Conference Publications

1. C. Bergeles, F.-Y. Lin, and G.-Z. Yang, "Concentric tube robot kinematics using neural networks," *Hamlyn Symposium on Medical Robotics*, 2015, **Oral Presentation**.
2. H H. King, J. Shang, J. Liu, C. Seneci, P. Wisanuvej, P. Giataganas, N. Patel, J. Clark, V. Vitiello, C. Bergeles, P. Pratt, K. Kerr, A. Darzi, G.-Z. Yang, "Micro-IGES robot for transanal robotic microsurgery," *Hamlyn Symposium on Medical Robotics*, 2015, **Oral Presentation**.
3. A. Kouris, C. Michailidis, and C. Bergeles, "Shifting respiratory care from lungs to patients: the necessity for patient-focused approach," *Int. Cong. European Respiratory Society*, 2015.
4. P. Giataganas, C. Bergeles, P. Pratt, M. Hughes, A. Darzi, and G.-Z. Yang, "Intraoperative 3D fusion of microscopic and endoscopic images in transanal endoscopic microsurgery," *Hamlyn Symposium on Medical Robotics*, 2014, **Oral Presentation, Best Orally Presented Paper Finalist**.
5. C. Bergeles, P. Vartholomeos, L. Qin, and P. E. Dupont, "RF-selective-excitation for state estimation of an MRI-powered motor, " *Int. Symp. Magnetic Resonance in Medicine*, 2013.
6. P. Vartholomeos, C. Bergeles, L. Qin, and P. E. Dupont, "Closed-loop position control of an MRI-powered biopsy robot," *Hamlyn Symposium on Medical Robotics*, pp. 83-84, 2012.
7. C. Bergeles, P. Vartholomeos, L. Qin, and P. E. Dupont, "Closed-loop commutator control of an MRI-powered actuator," *Image Guided Therapy Workshop*, 2012.
8. S. Schuerle, B. E. Kratochvil, C. Bergeles, S. Erni, and B. J. Nelson, "An electromagnetic manipulation system for pre-clinical testing of targeted drug delivery," *Int. Conf. Scientific and Clinical Applications of Magnetic Carriers*, 2012.
9. C. Framme, C. Bergeles, O. Ergeneman, B. E. Kratochvil, M. P. Kummer, S. Pané, V. Pocepcova, and B. J. Nelson, "Magnetically steered inserts for minimally invasive intravitreal surgical procedures," *Deutches Ophthalmologie Geschelschaft*, 2011.
10. C. Bergeles, M. P. Kummer, B. E. Kratochvil, J. J. Abbott, and B. J. Nelson, "*Ex vivo* experiments with intraocular microrobots," *IEEE Int. Conf. Robotics and Automation (ICRA), Workshop on Mesoscale Robotics for Medical Interventions*, 2010.

Book Chapters

1. O. Ergeneman, C. Bergeles, M. P. Kummer, J. J. Abbott, and B. J. Nelson, *Wireless intraocular microrobots: opportunities and challenges*, 1st ed., ser. Surgical Robotics: Systems, Applications, and Visions, J. Rosen, B. Hannaford, and R. Satava, Eds. Springer-Verlag GbmH, Heidelberg, 2011, vol. XXII.

Patents

1. K. Shamaei, C. Bergeles, J. J. Abbott, and B. J. Nelson, "Ophthalmoscopy using direct sensing of the flat aerial image created by an aspheric lens," Patent W.O. 2010/034502 A2, April 1 2010 (no longer supported).

Theses

1. C. Bergeles, "Visually servoing wireless magnetic intraocular microrobots," Ph. D. dissertation, ETH Zurich, 2011.
2. C. Bergeles, "Visual tracking of moving objects with emphasis on human gestures," Diploma thesis, National Technical University of Athens, 2006.

Referees and Capacity

[fellowship supervisor, 2013 – 2015]
Prof. Guang-Zhong Yang (g.z.yang@imperial.ac.uk)
The Hamlyn Centre for Robotic Surgery
Department of Computing and Department of Cancer and Surgery
Imperial College London, United Kingdom

[postdoctoral supervisor, 2012 – 2013]
Prof. Pierre E. Dupont (pierre.dupont@childrens.harvard.edu)
Department of Cardiovascular Surgery
Boston Children's Hospital
Harvard Medical School, Boston, Massachusetts, USA

[doctoral supervisor, 2006 – 2011]
Prof. Bradley J. Nelson (bnelson@ethz.ch)
Multiscale Robotics Laboratory
Institute of Robotics and Intelligent Systems
ETH Zurich, Switzerland

[doctoral mentor, 2006 – 2009]
Prof. Jake J. Abbott (jake.abbott@utah.edu)
Telerobotics Laboratory
Department of Mechanical Engineering
University of Utah, Salt Lake City, Utah, USA

[doctoral mentor, 2009 – 2010]
Dr. Bradley E. Kratochvil (bkratochvil@aeon-scientific.com)
CTO, Aeon Scientific GmbH
Zurich, Switzerland

[doctoral thesis committee member, 2011]
Prof. Gregory Hager (hager@cs.jhu.edu)
Computational Interaction and Robotics Lab
Computational Sciences and Engineering
Johns Hopkins University, Baltimore, USA

[diploma thesis supervisor, 2005 – 2006]
Prof. Petros Maragos (maragos@cs.ece.ntua.gr)
Computer Vision and Signal Processing Laboratory
School of Electrical and Computer Engineering
National Technical University of Athens, Greece