CURRICULUM VITAE

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EDUCATION

[1997-2001] *Ph.D. in Electrical Engineering*, Heriot-Watt University, Edinburgh, UK.
Thesis Title: Development and evaluation of an experimental undulating-fin device using the parallel bellows actuator

[1995-1996] *M.Sc. in Communications, Control and DSP*, Strathclyde University, Glasgow, UK.
Dissertation: Fuzzy logic controller design for a laser scanner system

[1989-1995] *Diploma in Electrical Engineering*, Aristotle University of Thessaloniki, Greece.
Dissertation: Digital equalization for loudspeakers

APPOINTMENTS

[2008 – today] *Assistant Professor & Head of the Control Systems Laboratory*,
Dept. of Electrical Engineering, School of Applied Technology,
Technological Educational Institute of Crete (TEI Crete), Heraklion, Greece.

[2008 – today] *Affiliated Researcher*,
Computational Vision & Robotics Laboratory, Institute of Computer Science,
Foundation for Research and Technology - Hellas (FORTH-ICS), Heraklion, Greece.

[2003 – 2008] *Adjunct Assistant Professor*,
Dept. of Mechanical Engineering, School of Applied Technology,
Technological Educational Institute of Crete (TEI Crete), Heraklion, Greece.

[2002 – 2008] *Postdoctoral Research Associate*,
Computational Vision & Robotics Laboratory, FORTH-ICS, Heraklion, Greece.

[1997 – 2000] *Research Associate*,
Ocean Systems Laboratory, Dept. of Computing and Electrical Engineering,
Heriot-Watt University, Edinburgh, UK.

TEACHING ACTIVITIES

Undergraduate courses currently taught at the Dept. of Electrical Engineering of TEI Crete:

- Automatic Control Systems II (Theory - Laboratory) **[designed full course]**
- Microcontrollers (Theory - Laboratory) **[designed full course]**
- Robotics (Theory)

Undergraduate courses I have taught at the Dept. of Mechanical Engineering of TEI Crete:

- Microcontroller Applications (Theory - Laboratory) **[designed full course]**
- Robotics (Theory)
- Mechatronics Design (Theory)

In addition, I have prepared and presented lectures on Matlab for the *Brain and Mind Sciences* Interdisciplinary Graduate Programme, which is organized by the University of Crete.

RESEARCH INTERESTS

- Modeling, control and prototyping of bio-inspired robotic locomotion systems
- Micro-robotics for medical applications
- Design and control of biomimetic actuation mechanisms
- Development of simulation tools for robotics
- Real-time control system design and implementation
- Visual servoing control strategies
- Control of under-actuated robots

PARTICIPATION IN RESEARCH PROJECTS

[2009 –] *Novel design principles and technologies for a new generation of high dexterity soft-bodied robots inspired by the morphology and behaviour of the octopus (OCTOPUS)*
Funding: Seventh Framework Programme (FP7-231608) - **Total budget :** € 9,74M

[2006 – 2011] *Versatile endoscopic capsule for gastrointestinal tumor recognition and therapy (VECTOR)*
Funding: Sixth Framework Programme (FP6/IST-033970) - **Total budget :** € 7,04M

[2006] *Observational learning in cognitive agents (MATHESIS)*
Funding: Sixth Framework Programme (FP6/IST-0275) - **Total budget:** € 2,25M

[2006] *An abstraction architecture for cognitive agents (GNOSYS)*
Funding: Sixth Framework Programme (FP6/IST-003835) - **Total budget:** € 2,13M

[2002 – 2005] *Biomimetic structures for locomotion in the human body (BIOLOCH)*
Funding: Fifth Framework Programme (FP5/IST.2001.34181) - **Total budget:** € 1,65M

[1997-1999] *Flexible appendage for positioning and stabilisation (FLAPS)*
Funding: UK's EPSRC (GR/L2921) - **Total budget:** £ 1,65M

HONOURS & AWARDS

- Head of the Control Systems Laboratory at the Dept. of Electrical Engineering, TEI Crete.
- Best paper award at the *Eurosensors XXIV* Conference [P13].
- Best presentation award at the *CNS*2004* Conference [A2].
- Participation in the VECTOR EU-IST project, which received the Best Exhibit Award at the *ICT 2010* Event, organized by the European Commission, Brussels 27-29 September 2010.

- Co-chair of the « *Biologically Inspired Robot I*» session at the *IEEE Int. Conf. on Robotics and Biomimetics (ROBIO'08)*, Bangkok, Thailand, February 2009.
- Participation in the «*Robot Submarines*» exhibition, held in the London Science Museum (June 2000 – March 2001), with a prototype undulating-fin actuator, developed during my Ph.D. research.
- M.Sc. degree awarded *With Distinction*.
- Undergraduate Scholarship, State Scholarships Foundation, Greece, 1989-1990.

REVIEWER ACTIVITIES

- *IEEE Journal of Oceanic Engineering*
- *IEEE Mediterranean Conf. on Control and Automation (MED'11)*, Corfu, Greece, June 2011.
- *IEEE Int. Conf. on Robotics and Automation (ICRA'11)*, Shanghai, China, May 2011.
- *IEEE Int. Conf. on Robotics and Automation (ICRA'10)*, Anchorage, USA, May 2010.
- *Int. Conf. on Artificial Neural Networks (ICANN'06)*, Athens, Greece, September 2006.
- *Int. Conf. on Artificial Neural Networks (ICANN'05)*, Warsaw, Poland, September 2005.
- *IEEE Int. Conf. on Decision and Control (CDC'05)*, Seville, Spain, December 2005.

CITATIONS

The current number of citations (excluding self-citations) for the publications listed below is **406**, with an ***h*-index** of **5** (April 2011 data, source: www.scopus.com).

PUBLICATIONS

Journal Papers

J6 R. Carta, **M. Sfakiotakis**, N. Pateromichelakis, J. Thoné, D.P. Tsakiris and R. Puers **(2011)**. A Multi-Coil Inductive Powering System for an Endoscopic Capsule with Vibratory Actuation. ***Sensors and Actuators A: Physical*** (to appear)

J5 G. La Spina**, M. Sfakiotakis**, D.P. Tsakiris, A. Menciassi and P. Dario **(2007)**. Polychaete-like undulatory robotic locomotion in unstructured substrates. ***IEEE Transactions on Robotics***, vol 6(11-12), pp. 1200—1212.

J4 **M. Sfakiotakis** and D.P. Tsakiris **(2007)**. Biomimetic centering behavior for undulatory robots. ***International Journal of Robotics Research***, vol 26(11-12), pp. 1267—1282.

J3 **M. Sfakiotakis** and D.P. Tsakiris **(2007)**. Neuromuscular control of reactive behaviors for undulatory robots. ***Neurocomputing***, vol 70(10-12), pp. 1907—1913.

J2 **M. Sfakiotakis** and D.P. Tsakiris **(2006)**. SIMUUN: A simulation environment for undulatory locomotion. ***International Journal of Modelling and Simulation***, vol 26(4), pp. 4430—4464.

J1 **M. Sfakiotakis,** D.M. Lane, and J.B.C. Davies **(1999)**. Review of fish swimming modes for aquatic locomotion. ***IEEE Journal of Oceanic Engineering***, vol 24(2), pp. 237—252.

Refereed Papers in International Conferences

P14 G. Ciuti, N. Pateromichelakis, **M. Sfakiotakis**, P. Valdastri, A. Menciassi, D.P. Tsakiris, P. Dario **(2011)**, "A wireless module for vibratory motor control and inertial sensing in capsule endoscopy", ***Eurosensors XXV***, Athens, Greece. (under review)

P13 R. Carta, N. Pateromichelakis, J. Thone, **M. Sfakiotakis,** D.P. Tsakiris and R. Puers, **(2010)**, "A Wireless Powering System for a Vibratory-Actuated Endoscopic Capsule", ***Proc. Eurosensors XXIV***, pp. 572—575, Linz, Austria.

P12 **M. Sfakiotakis** and D.P. Tsakiris **(2009)**. Undulatory and pedundulatory robotic locomotion via direct and retrograde body waves. ***Proc. IEEE Int. Conf. on Robotics and Automation (ICRA'09),*** pp. 3457—3463, Kobe, Japan.

P11 **M. Sfakiotakis** and D.P. Tsakiris **(2008)**. Pedundulatory robotic locomotion: Centipede and polychaete modes in unstructured substrates. ***Proc. IEEE Int. Conf. on Robotics and Biomimetics (ROBIO'08),*** pp. 651—658, Bangkok, Thailand.

P10 G. López-Nicolás, **M. Sfakiotakis**, D.P. Tsakiris, A.A. Argyros, C. Sagues and J. J. Guerrero **(2009)**. Visual homing for undulatory robotic locomotion. ***Proc. IEEE Int. Conf. on Robotics and Automation (ICRA'09),*** pp. 2629—2636, Kobe, Japan.

P9 X. Zabulis, **M. Sfakiotakis**, and D.P. Tsakiris **(2008)**. Effects of vibratory actuation on endoscopic capsule vision. ***Proc. IEEE Int. Conf. of the Engineering in Medicine and Biology Society (EMBC'08),*** pp. 5901—5904, Vancouver, Canada.

P8 **M. Sfakiotakis**, D.P. Tsakiris, and K. Karakasiliotis **(2007)**. Polychaete-like pedundulatory robotic locomotion. ***Proc. IEEE Int. Conf. on Robotics and Automation (ICRA'07),*** pp. 269—274, Roma, Italy.

P7 **M. Sfakiotakis**, D.P. Tsakiris, and A. Vlaikidis **(2006)**. Biomimetic centering for undulatory robots. ***Proc. 1st IEEE/RAS-EMBS Int. Conf. on Biomedical Robotics and Biomechatronics (BioRob'06)***, pp. 744 – 749, Pisa, Italy.

P6 D.P. Tsakiris, **M. Sfakiotakis**, A. Menciassi, G. La Spina, and P. Dario **(2005)**. Polychaete-like undulatory robotic locomotion. ***Proc. IEEE Int. Conf. on Robotics and Automation (ICRA'05)***, pp. 3029—3034, Barcelona, Spain.

P5 **M. Sfakiotakis** and D.P. Tsakiris (2004). A simulation environment for undulatory locomotion. ***Proc. IASTED Int. Conf. on Applied Simulation and Modelling (ASM'04)***, pp. 154—159, Rhodes, Greece.

P4 **M. Sfakiotakis**, D.M. Lane, and J.B.C. Davies **(2001)**. An experimental undulating-fin device using the Parallel Bellows Actuator. ***Proc. IEEE Int. Conf. on Robotics and Automation (ICRA'01)***, pp. 2356—2362, Seoul, Korea, 2001.

P3 **M. Sfakiotakis**, D.M. Lane, and J.B.C. Davies **(2000)**. Development of a 'fin actuator' for the investigation of undulating fin propulsion. ***Proc. 1st Int. Symp. on Aqua Bio-Mechanisms (ISABMEC'00)***, pp. 265—270, Honolulu, USA.

P2 J.B.C. Davies, D.M. Lane, G.C. Robinson, D.J. Obrien, M. Pickett, **M. Sfakiotakis**, and B. Deacon **(1998)**. Subsea applications of continuum robots. ***Proc. Int. Symp. on Underwater Technology***, pp. 363—369, Tokyo, Japan.

P1 **M. Sfakiotakis**, A.W. Ordys, and L. Petropoulakis **(1998)**. Fuzzy logic controller design for a laser scanner system. ***Proc. 5th IEEE Int. Worksh. on Advanced Motion Control (AMC'98)***, pp. 659—665, Coimbra, Portugal.

Refereed Papers in National Conferences

G4 M. Tsakiris and **M. Sfakiotakis (2010).** Control of an underactuated robotic system (pendubot). ***Proc. 2nd Hellenic Conference on Robotics***, Patras, Greece, 9-10 December.

G3 **M. Sfakiotakis**, X. Zabulis, N. Pateromichelakis, and D.P. Tsakiris **(2010).** Techniques for assisting propulsion and visual servoing for endoscopic capsules. ***Proc. 2nd Hellenic Conference on Robotics***, Patras, Greece, 9-10 December.

G2 N. Pateromichelakis, **M. Sfakiotakis**, and D.P. Tsakiris **(2009).** Biomimetic pedundulatory locomotion robotic systems. ***Proc. 2nd Hellenic Conference on Robotics***, Athens, Greece, 23-24 February.

G1 G. Papanikolaou, S. Bachtsentzis, and **M. Sfakiotakis (1995).** Time-Domain Spectroscopy for audio installations. ***Proc. 2nd Meeting of the Hellenic Branch of the Audio Engineering Society (AES)***, Athens, March 1995.

Refereed Extended Abstracts in International Conferences

A4 **M. Sfakiotakis**, X. Zabulis, and D.P. Tsakiris **(2010)**. Endoscopic capsule line-of-sight alignment by visual servoing. Extended abstract at the ***7th Intl. Conf. on Wearable Micro and Nano Technologies for Personalized Health (pHealth 2010)***, Berlin, Germany, May 26-28.

A3 **M. Sfakiotakis** and D.P. Tsakiris **(2006)**. Neural control of reactive behaviors for undulatory robots. Extended abstract and poster presentation at the ***Annual Computational Neuroscience Meeting (CNS*2006)***, Edinburgh, UK, July 15-18.

A2 D.P. Tsakiris, A. Menciassi, **M. Sfakiotakis**, G. La Spina, and P. Dario **(2004)**. Undulatory locomotion of polychaete annelids: mechanics, neural control and robotic prototypes. Extended abstract, poster and presentation at the ***Annual Computational Neuroscience Meeting (CNS*2004)***, Baltimore, USA, July 17-22.

A1 D.P. Tsakiris, A. Menciassi, **M. Sfakiotakis**, G. La Spina, and P. Dario **(2004)**. Polychaete-like Undulatory Robots for Search-and-Rescue Operations. Poster and presentation at the ***IEEE Workshop on Safety, Security and Rescue Robotics (SSRR'04)***, Bonn, Germany, May 24-26. Abstract published in the Workshop Proceedings CD-ROM (ISBN 3-8167-6556-4).