☏ +1-(215)-906-2556
☎ +1-(267)-439-4239
FAX +1-(877)-350-3526
✉ shrevzen@umich.edu
http://shrevzen.nfshost.com

Shai Revzen

General Information

Born	**December, 1972**	
Nationality	**Israeli, Canadian**	*(dual citizenship)*
Languages	**English, Hebrew**	*native speaker*

Education

2003 Dec 2009	**Ph.D.**, *Univ. California*, Berkeley. Integrative Biology	
1994 Jun 2002	**M.Sc.**, *Hebrew Univ.*, Jerusalem. Computer Science (Optimization)	
1989 May 1993	**B.Sc.**, *Hebrew Univ.*, Jerusalem, *Magna cum laude*. Degree from honours program; Majors Computer Science, Math (extended); Minor Physics	

Doctoral thesis

title	Neuromechanical Control Architectures in Arthropod Locomotion
supervisor	Robert J. Full

Master thesis

title	Paging on Access Graphs of Minimal Degree 3
supervisor	Nati Linial

Work Experience

Academia

12–now **Assistant Professor, EECS**, *Univ. of Michigan*, Ann Arbor.
Research, student supervision; robotics and control theory

11–12 **Visiting Assistant Professor, EECS**, *Univ. of Michigan*, Ann Arbor.
Research, student supervision; robotics and control theory

09–12 **Postdoctoral Research Associate, SEAS**, *Univ. of Pennsylvania*, Philadelphia.
Research, student supervision; robotics and control theory

06–09 **Graduate Student Researcher, IB**, *Univ. of Calfornia*, Berkeley.
Funded Ph.D. research; biomechanics

Tech Industry

03–now **Founding partner**, *Bio-Signal Analysis*, Tel-Aviv.
Algorithms; Electrocardiology technology start-up

01–06 **Chief Architect, R&D**, *Harmonic, Inc.*, Sunnyvale.
R&D, embedded programming, algorithms; Company develops digital video equipment for cable and satellite

98–01 **Chief Architect**, *Harmonic Data, Ltd.*, Tel-Aviv.
Company-wide system architecture, basic research team manager, academic liaison; Company develops Internet over satellite solutions

96–98 **Instructor**, *John Bryce Training*, Ramat-Gan.
Teaching Java, Javascript, HTML; Company trains IT professionals

97 **Software Engineer**, *Compedia, Ltd*, Ramat-Gan.
Design and development of 3D video game engine; Company develops edutainment products for kids

Military Service (Israel)

96–now **Reserve duty**, *IDF*.

93–96 **Mandatory service**, *IDF*.

Publications

S Revzen and J M Guckenheimer Finding the dimension of slow dynamics in a rhythmic system J R Soc Lond Interface, 2012, 9, 957–971

S Sundaram, S Revzen, and G Pappas. A control-theoretic approach to disseminating values and overcoming malicious links in wireless networks Automatica, (In press).

P J White, S Revzen, C E Thorne, and M Yim. A general stiffness model for programmable matter and modular robotic structures *Robotica*, 29:103-121, 2011.

A J Spence, S Revzen, J Seipel, C Mullens, and R J Full. Insects running on elastic surfaces *J Exp Biol*, 213(11):1907, 2010.

S Revzen and J M Guckenheimer. Estimating the phase of synchronized oscillators *Physical Review E*, 78(5):051907, Nov 2008.

A Jusufi, D I Goldman, S Revzen, and R J Full. Active tails enhance arboreal acrobatics in geckos *Proceedings of the National Academy of Sciences*, 105(11):4215–4219, 2008.

Invited Papers, Tutorials, Book Chapters, Theses

S Revzen, J Sastra, N Eckenstein M Yim CKBot Platform for the ICRA 2010 Planetary Challenge Workshop "Modular Robots: The State of the Art", Proceedings of IEEE ICRA conference, 2010, 11-12

S Revzen. *Neuromechanical control architectures in arthropod locomotion* PhD thesis, University of California, Berkeley, 2009.

S Revzen. Paging on access graphs of minimal degree 3. Master's thesis, Hebrew University, Jerusalem, October 2001.

S Revzen, D E Koditschek, and R J Full. *Progress in Motor Control - A Multidisciplinary Perspective*, chapter Towards Testable Neuromechanical Control Architectures for Running, pages 25–56. Springer Science and Business Media, LLC - NY, 2008.

S Revzen. Templates and Anchors for analysis and synthesis of control Tutorial, Workshop 4, Mathematical Biosciences Institute, March 2008.

S Revzen. Phase estimation from kinematic data Tutorial, Workshop 4, Mathematical Biosciences Institute, March 2008.

Conferences

S Revzen, B D Ilhan, D E Koditschek Dynamical Trajectory Replanning for Uncertain Environments IEEE Conference on Decision and Control, 2012 (accepted)

J Sastra, S Revzen and M Yim. Softer legs allow a modular hexapod to run faster Climbing and Walking Robotics (CLAWAR) 2012

M Maus, S Revzen, J M Guckenheimer. Drift and deadbeat control in the Floquet structure of human running. Dynamic Walking, 2012 (submission)(talk online)

S Revzen, M Bhoite, J A Macasieb, and M Yim. Structure synthesis on-the-fly in a modular robot IEEE/RSJ International Conference on Intelligent Robots and Systems, Sept. 2011. (press kit)

S Revzen, J M Guckenheimer, and R J Full. Subtle differences in gaits: the perspective of data driven floquet analysis. In *Yearly meeting of the Society for Integrative and Comparative Biology*, 2011 (abstract online)

T Y Moore, S Revzen, S Burden, and R J Full. Adding inertia and mass to test stability predictions in rapid running insects. In *Yearly Meeting of the Society for Integrative and Comparative Biology*, 2010. (abstract online)

S Revzen, J M Guckenheimer, and R J Full. Study of the neuromechanical control of rhythmic behaviors by floquet analysis. In *Yearly meeting of the Society for Integrative and Comparative Biology*, 2009. (abstract online)

A Frimerman, S Revzen, and B Shani. Spatial relation of qrs-t vectorcardiogram is a good predictor of coronary disease in patients with normal rest 12-leads ecg (poster). In *55th Annual Conference of the Israel Heart Society and the Israel Society of Cardiothoracic Surgery*, 2008.

S Revzen and J M Guckenheimer. A dynamical systems analysis of running cockroaches. In *Mathematical Biosciences Institute, Workshop 4*, 2008. (abstract online)

S Revzen, M S Berns, D E Koditschek, and R J Full. Determining neuromechanical control architecture using kinematic phase response to perturbations. In *Yearly meeting of the Society for Integrative and Comparative Biology*, 2008. (abstract online)

S Revzen, J Bishop-Moser, A J Spence, and R J Full. Testing control models in rapid running insects using lateral ground translation. *Integr. Comp. Biol.*, 47(suppl 1):e1–152, 2007. (abstract online)

S Revzen, D E Koditschek, and R J Full. Selecting among neuromechnical control architectures using kinematic phase and perturbation experiments. In *Yearly meeting of the American Society of Biomechanics*, 2007. (poster)

A J Spence, S Revzen, K Yeates, C Mullens, and R J Full. Insects running on compliant surfaces. *Integr. Comp. Biol.*, 47(suppl 1):e1–152, 2007. (abstract online)

S Revzen, D E Koditschek, and R J Full. Testing feedforward control models in rapid running insects using large perturbations. *Integr. Comp. Biol.*, 46(suppl 1):e1–162, 2006. (abstract online)

Patents

B Shani, S Revzen, and A Frimerman. Analysis of electrocardiogram signals. *Patent*, (WO/2006/123334), November 2006.

E Frachtenberg and S Revzen. Lossless data compression. *Patent*, (20030030575), February 2003.

In Preparation / Under Review / Revision

S Revzen, S A Burden, T Y Moore, J M Mongeau, and R J Full. Instantaneous Kinematic Phase Reflects Neuromechanical Response to Lateral Perturbations of Running Cockroaches *Biological Cibernetics*, (under review)

S Revzen, R J Full, and D E Koditschek. Using kinematic phase to test neuromechanical control hypotheses: Running in cockroaches disrupted by a hurdle. *(in-prep)*