

Zach Solan - Curriculum Vitae

Date of Birth: 17.12.1968 (Israel)

Family Status: Married to Maly Solan + 2 daughters Noa and Karni

E-mail: zsolan@solanad.com

Languages: Hebrew, English

Homepage: <http://www.solanad.com>

Updated 26/12/06

Education:

2005 – 2006

Post-Doc Tel-Aviv University, research on natural language applications

2000 - 2005

Ph.D. in Physics, Tel-Aviv University under the guidance of Prof. David Horn (School of Physics Tel-Aviv University, Tel-Aviv) , Prof. Shimon Edelman (Department of Psychology Cornell University, Ithaca NY) and Prof. Eytan Ruppin (School of Computer Science, Tel-Aviv University, Tel-Aviv). A joint project with Cornell University.

Thesis subject: Unsupervised Learning of Natural Languages. <http://adios.tau.ac.il>

1996 - 1999

M.Sc. in Physics (Cum Laude), Tel Aviv University, under the guidance of Prof. Solange Akselrod (School of Physics Tel-Aviv University, Tel-Aviv) and Prof Eytan Ruppin (School of Computer Science, Tel-Aviv University, Tel-Aviv).

Thesis subject: Neural Modeling of human sensory perception

1991 - 1995

B.Sc. in Physics (single major), Tel Aviv University, Tel-Aviv.

Final project: Optical neural networks

Prizes and Scholarships:

2002 Dan David Prize, graduate student category

2002 Yeshuaia Horvitz Association Scholarship in Complexity Science

Patents:

- Method and Apparatus for Learning, Recognizing and Generalizing Sequences: National Phase: PCT/IL2004/000704
- Method and Apparatus for Transforming Sequences: Provisional 31/1/2006
- Method and Apparatus for Classifying Protein Sequences: Provisional 1/7/2006

Work Experience:

2006 –

Algorithm Developer: a freelance algorithm developer in the fields of Machine Learning, Information Retrieval and Natural Language Processing.

1999 – 2001:

Director of R&D of Zapper Technologies Inc.

Algorithms team-leader Zapper Technologies Inc.

2 years experience as a team leader and development manager of the company,

Main activities: search algorithms using context; development of algorithms for semantic maps, semantic similarity, ontological classification, text and document classification.

1990 - 1999

Co-owner and V.P R&D of Mentor Humanication Ltd. a software company specialized in the area of decision making simulations.

Main activities: decision making simulations for diagnosis in neurological and cognitive impairments; business decision making simulations.

Publications:

Journal Papers

- Zach Solan, David Horn, Eytan Ruppin, and Shimon Edelman, *Unsupervised learning of natural languages*, in Proc. Natl. Acad. Sci., 102:11629-11634, August 16, 2005
- Finkelstein, L., Gabrilovich E., Matias, Y., Rivlin, E., Solan Z., Wolfman, G., and Ruppin, E., (2002) "Placing Search in Context: The Concept Revisited" ACM Transactions on Information Systems, 20(1):116-131;
- Solan, Z., Ruppin, E., (2001) Similarity in Perception: A Window to Brain Organization Journal of Cognitive Neuroscience, 13:18-30;

Chapter in a book

- Zach Solan, Eytan Ruppin, Shimon Edelman and David Horn, (2005) Evolution of Language Diversity: Why fitness counts. In Maggie Tallerman, editor, [*Language Origins: Perspectives on Evolution*](#). Oxford University Press.

Media

- "Computers learn a new language", New Scientist magazine, 06 August 2005, Vol 2511 page 23
- "Computer Program Learns Language Rules And Composes Sentences, All Without Outside Help", Science Daily 01 September 2005.
- "Computer/biological patterns generated by US-Israeli algorithm", The Jerusalem Post, 04 September 2005.
- "Machine Prose", Plus Magazine , 12 August 2005,

Conferences

- Vered Kunik, Zach Solan, Shimon Edelman, Eytan Ruppin and David Horn, Motif Extraction and Protein Classification, to be presented at CSB, Aug. 2005.
- Shimon Edelman, Zach Solan, Eytan Ruppin and David Horn, Learning syntactic constructions from raw corpora, to appear in Proc. of the 29th Boston University Conference on Language Development, (Boston, MA, Nov 2004).
- David Horn, Zach Solan, Eytan Ruppin and Shimon Edelman, Unsupervised language acquisition: syntax from plain corpus, presented at the Newcastle Workshop on Human Language, Feb. 2004.
- Bo Pedersen, Shimon Edelman, Zach Solan, David Horn, and Eytan Ruppin, (2004) Some Tests of an Unsupervised Model of Language Acquisition, in Proc. COLING-2004 Workshop on Psycho-computational Models of Human Language Acquisition, (Geneva, Switzerland, Aug. 2004).
- Shimon Edelman, Zach Solan, David Horn and Eytan Ruppin, (2004) Bridging computational, formal and psycholinguistic approaches to language, to appear in Proc. of the 26th Conference of the Cognitive

Science Society (Chicago, IL, Aug.2004).

- Shimon Edelman, Zach Solan, David Horn and Eytan Ruppin, (2003) Rich Syntax from a Raw Corpus: Unsupervised Does It; a position paper to be presented at Syntax, Semantics and Statistics; a NIPS-2003 workshop (Whistler, BC, Dec. 2003).
- Solan, Z., Horn, D., Ruppin, E., Edelman, S., (2003) Unsupervised Context Sensitive Language Acquisition from a Large Corpus (draft); in Proc. NIPS-2003.
- Solan, Z., Horn, D., Ruppin, E., Edelman, S., (2003) A distributive, self-organizing approach to language acquisition and representation of language structure; in Proc. CogSci-2003.
- Solan, Z., Ruppin, E., Horn, D., Edelman, S., (2002) Automatic acquisition and efficient representation of syntactic structures, NIPS-2002.
- Solan, Z., Ruppin, E., Horn, D., Edelman, S., (2002) Evolution of language diversity: the survival of the fitness (extended abstract of a talk presented at the 4th Intl. Conference on the Evolution of Language, Cambridge, MA, March 2002);