CURRICULUM VITAE OF VAROL AKMAN

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- Dept of Computer Engineering, Room EA 503, Ihsan Dogramaci Bilkent University, Bilkent, Ankara 06800, Turkey

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DEGREES

- BS (1979): Electrical Eng, Middle East Technical University (METU), Ankara
- MS (1980): Computer Eng, METU, Ankara
  - Thesis title: *Design and implementation of the front-end and controller hardware/software systems for the RAP database machine*
  - Advisor: Esen A. Ozkarahan (deceased)
- PhD (1985): Electrical, Computer & Systems Eng, Rensselaer Polytechnic Institute
  - Thesis title: *Shortest paths avoiding polyhedral obstacles in 3-dimensional Euclidean space*
  - Advisor: Wm. Randolph Franklin

POSITIONS

In the Netherlands

- Vis Asst Prof, Departement Informatica, Universiteit Utrecht (1985-86)
- Senior Researcher, Centrum Wiskunde & Informatica, Amsterdam (1986-88)

At Bilkent

- Asst Prof, Computer Eng (1988-90)
- Assoc Prof, Computer Eng (1990-95)
- Prof (joint appt), Philosophy (2002-15)
- Prof, Computer Eng (1995-)

AWARDS AND RECOGNITIONS

- Fulbright scholarship to study in the US (1980-85)
- Young Scientist award, The Scientific & Technological Research Council of Turkey (1989)
- Young Investigator award, METU Mustafa N. Parlar Education & Research Foundation (1990)
- Fellow, World Innovation Foundation (2002-)
- Member of Editorial Board, *First Monday*, http://firstmonday.org (2002-)

RESEARCH

My current research is two pronged: (i) contextual reasoning in AI and (ii) public implications of the Internet. Brief explanations follow.

AI

Problems originating from natural language processing and understanding, especially those caused by the lack of explicit context:

When we say a particular thing, we do so in a context. Thus, there are embedded background assumptions available only through the context. We are also good at shifting between contexts. Can context be formalized in a formal framework? This would lead to improved software not only in NLU but also in knowledge-based systems, robotics, search engines, and personal assistants such as Siri, Cortana, OK Google.

My grad course CS 578 examines contexts, as well as other NLP topics such as neural network methods (deep learning) for natural language.

Internet

Problems caused by tensions between local versus global, individual versus corporate, and democratic versus authoritarian in the framework of the Internet. More specifically:

Basic concepts and history of the Internet as a socio-political medium. Free access to information in the networked world. The Internet as a trusted communications medium in light of security and privacy issues. Censorship and politics of the Internet vis-à-vis interventions by oppressive governments. Social movements in the 21st century marked by rapid broadcast of ideas and images. Twitter as a political space.

My grad course CS 513 treats such societal aspects of the Internet.

TEACHING (RECENT COURSES)

Undergrad

- CS 461 Artificial Intelligence
- CS 483 Natural Language Processing

Grad

- CS 513 Implications of the Internet
- CS 578 Natural Language Processing

ADMINISTRATIVE WORK

- Founding Chair, Philosophy Dept (2002-15)
- Member of Faculty Executive Board, Humanities & Letters (2003-15)
- Member of University Executive Board (2011-15)
- Member of University Senate (2012-13 and 2014-15)
- Acting Dean, Faculty of Humanities & Letters (2012-13 and 2014-15)

PUBLICATIONS (SELECTIVE COVERAGE)

[Those currently listed in *Web of Science* highlighted]

Monograph

1. V Akman, *Unobstructed Shortest Paths in Polyhedral Environments*, Lecture Notes in Computer Science, Vol 251, Springer-Verlag (1987)

Edited Volumes

1. V Akman, PJW ten Hagen, P Veerkamp, eds, *Intelligent CAD Systems II*, Springer-Verlag (1989)
2. V Akman, P Bouquet, R Thomason, RA Young, eds, *Modeling and Using Context*, Lecture Notes in Artificial Intelligence, Vol 2116, Springer-Verlag (2001)

Journal Articles

1. V Akman, Solution of problem 82-5 (proposed by J Stolfi and L Guibas), J Algorithms 3(2): 184-187 (1983)
2. WR Franklin, V Akman, C Verrilli, Voronoi diagrams with barriers and on polyhedra for minimal path planning, *Visual Computer* 1(2): 133-150 (1985)

3. WR Franklin, V Akman, Building an octree from a set of parallelepipeds, *IEEE Computer Graphics & Applications* 5(10): 58-64 (1985)
4. WR Franklin, V Akman, Reconstructing visible regions from visible segments, *BIT* 26(4): 430-441 (1986)
5. V Akman, Writing self-replicating code, *Computer J* 29(6): 573-574 (1986)
6. V Akman, WR Franklin, On the question "Is $\sum \nolimits_{i=1^n} \surd a_i \leq L$?," EATCS Bulletin 28: 16-20 (1986)
7. V Akman, An algorithm for determining an opaque minimal forest of a convex polygon, *Information Processing Letters* 24(3): 193-198 (1987)
8. WR Franklin, V Akman, A simple and efficient haloed line algorithm for hidden line elimination, *Computer Graphics Forum* 6(2): 103-109 (1987)
9. WR Franklin, V Akman, Adaptive grid for polyhedral visibility in object space - an implementation, *Computer J* 31(1): 56-60 (1988)
10. V Akman, PJW ten Hagen, JLH Rogier, P Veerkamp, Knowledge engineering in design, *Knowledge-Based Systems* 1(2): 67-77 (1988)
11. V Akman, WR Franklin, Representing objects as rays, or how to pile up an octree, *Computers & Graphics* 13(3): 373-379 (1989)
12. V Akman, PJW ten Hagen, The power of physical representations, *AI Mag* 10(3): 49-65 (1989)
13. V Akman, WR Franklin, M Kankanhalli, C Narayanaswami, Geometric computing and uniform grid technique, *Computer-Aided Design* 21(7): 410-420 (1989)
14. V Akman, WR Franklin, Ray representation for k-trees, *Pattern Recognition Letters* 10(5): 315-320 (1989)
15. V Akman, PJW ten Hagen, T Tomiyama, A fundamental and theoretical framework for an intelligent CAD system, *Computer-Aided Design* 22(6): 352-367 (1990)
16. V Akman, Implementation of Karp-Luby Monte-Carlo method - an exercise in approximate counting, *Computer J* 34(3): 279-282 (1991)
17. HA Guvenir, V Akman, Problem representation for refinement, *Minds & Machines* 2(3): 267-282 (1992)
18. V Akman, A Arslan, Sweeping with all graphical ingredients in a topological picturebook, *Computers & Graphics* 16(3): 273-281 (1992)
19. E Tin, V Akman, Computing with causal theories, *Intl J Pattern Recognition & Artificial Intelligence* 6(4): 699-730 (1992)
20. M Marhl, V Akman, On the correct determination of rotational angles for twisted-profiled sweep objects, *Computers & Graphics* 18(5): 691-694 (1994)
21. M Pakkan, V Akman, Issues in commonsense set-theory, *Artificial Intelligence Rev* 8(4): 279-308 (1994)
22. V Akman, Ripping the text apart at different seams, *Stanford Humanities Rev* 4(1): 31-34 (1994)
23. V Akman, When silence may mean derision, *J Pragmatics* 22(2): 211-212 (1994)
24. E Tin, V Akman, Computational situation theory, *ACM SIGART Bull* 5(4): 4-17 (1994)
25. E Tin, V Akman, M Ersan, Towards situation-oriented programming languages, *ACM SIGPLAN Notices* 30(1): 27-36 (1995)
26. M Ersan, V Akman, Situated modeling of epistemic puzzles, *Bull IGPL* 3(1): 51-76 (1995)
27. M Pakkan, V Akman, HYPERSOLVER - a graphical tool for commonsense set-theory, *Information Sciences* 85(1-3): 43-61 (1995)
28. B Say, V Akman, Current approaches to punctuation in computational linguistics, *Computers & Humanities* 30(6): 457-469 (1996)
29. V Akman, M Ersan, Commonsense aspects of buying and selling, *Cybernetics & Systems* 27(4): 327-352 (1996)
30. V Akman, M Surav, Steps toward formalizing context, *AI Mag* 17(3): 55-72 (1996)
31. E Tin, V Akman, Situated nonmonotonic temporal reasoning with BABY-SIT, *AI Communications* 10(2): 93-109 (1997)
32. V Akman, M Surav, The use of situation theory in context modeling, *Computational Intelligence* 13(3): 427-438 (1997)
33. M Bayraktar, B Say, V Akman, An analysis of English punctuation: the special case of comma, *Intl J Corpus Linguistics* 3(1): 33-57 (1998)
34. V Akman, Situations and artificial intelligence, *Minds & Machines* 8(4): 475-477 (1998)
35. V Akman, Relating to Ken Kesey's wise man, *J Pragmatics* 32(4): 485-489 (2000)
36. V Akman, Rethinking context as a social construct, *J Pragmatics* 32(6): 743-759 (2000)

37. V Akman, Introduction to the special issue on philosophical foundations of artificial intelligence, *J Experimental & Theoretical Artificial Intelligence* 12(3): 247-250 (2000)
38. V Akman, P Blackburn, Editorial: Alan Turing and artificial intelligence, *J Logic, Language & Information* 9(4): 391-395 (2000)
39. AP Saygin, I Cicekli, V Akman, Turing test: 50 years later, *Minds & Machines* 10(4): 463-518 (2000)
40. AB Sevdik, V Akman, Internet in the lives of Turkish women, *First Monday* 7(3) (2002)
41. K Altintas, T Aydin, V Akman, Censoring the Internet: the situation in Turkey, *First Monday* 7(6) (2002)
42. B Edmonds, V Akman, Editorial: context in context, *Foundations of Science* 7(3): 233-238 (2002)
43. A Fetzer, V Akman, Contexts of social action: guest editors' introduction, *Language & Communication* 22(4): 391-402 (2002)
44. V Akman, C Bazzanella, The complexity of context: guest editors' introduction, *J Pragmatics* 35(3): 321-329 (2003)
45. V Akman, S Erdogan, J Lee, V Lifschitz, H Turner, Representing the Zoo World and the Traffic World in the language of the Causal Calculator, *Artificial Intelligence* 153(1-2): 105-140 (2004)
46. V Akman, On Strawsonian contexts, *Pragmatics & Cognition* 13(2): 363-382 (2005)
47. V Akman, Relational priming: obligational nitpicking, *Behavioral & Brain Sciences* 31(4): 378-379 (2008)
48. V Akman, The war against mediocrity and cliché, *Philosophers' Mag* 44: 42-44 (2009)
49. V Akman, MB Senol, The truth about "it is true that...", *Pragmatics & Cognition* 23(2): 284-299 (2016)
50. V Akman, Burn all your textbooks, *Australasian J Logic* 14(3) (2017)

Book Chapters

1. WR Franklin, V Akman, Shortest paths in 3-space, Voronoi diagrams with barriers, and related complexity and algebraic issues, in *Fundamental Algorithms for Computer Graphics*, RA Earnshaw, ed, 895-917, Springer-Verlag (1985)
2. WR Franklin, V Akman, Octree data structures and creation by stacking, in *Computer-Generated Images*, N Magnenat-Thalmann, D Thalmann, eds, 176-185, Springer-Verlag (1985)
3. B Veth[1], An integrated data description language for coding design knowledge, in *Intelligent CAD Systems I*, PJW ten Hagen, T Tomiyama, eds, 295-313, Springer-Verlag (1987)
4. V Akman, Geometry and graphics applied to robotics, in *Theoretical Foundations of Computer Graphics & CAD*, RA Earnshaw, ed, 619-638, Springer-Verlag (1988)
5. WR Franklin, C Narayanaswami, M Kankanhalli, M Seshan, V Akman, Efficiency of uniform grids for intersection detection on serial and parallel machines, in *New Trends in Computer Graphics*, N Magnenat-Thalmann, D Thalmann, eds, 288-297, Springer-Verlag (1988)
6. AAM Kuijk, PJW ten Hagen, V Akman, An exact incremental hidden surface removal algorithm, in *Advances in Computer Graphics Hardware II*, AAM Kuijk, W Strasser, eds, 21-37, Springer-Verlag (1988)
7. V Akman, PJW ten Hagen, AAM Kuijk, A vector-like architecture for raster graphics, in *Advances in Computer Graphics Hardware II*, AAM Kuijk, W Strasser, eds, 137-154, Springer-Verlag (1988)
8. WR Franklin, C Narayanaswami, M Kankanhalli, V Akman, PYF Wu, Efficient geometric algorithms for CAD, in *Geometric Modeling for Product Engineering*, MJ Wozny, JU Turner, K Preiss, eds, 485-498, North-Holland (1990)
9. V Akman, E Tin, What is in a context, in *Communication, Control & Signal Processing*, vol 2, E Arıkan, ed, 1670-1676, Elsevier (1990)
10. V Akman, D Ede, WR Franklin, PJW ten Hagen, Mental models of force and motion, in *Intelligent Motion Control*, vol 1, O Kaynak, ed, 153-158, IEEE Press (1990)
11. V Akman, Heterogeneous inference in design, in *Computers in Engineering*, vol 4, MM Tanik, A Dogac, A Lehmann, AE Harmanci, eds, 143-150, ASME Press (1992)
12. V Akman, PJW ten Hagen, T Tomiyama, Desirable functionalities of intelligent CAD systems, in *Intelligent Systems in Design & Manufacturing*, CH Dağlı, A Kusiak, eds, 119-138, ASME Press (1994)
13. E Tin, V Akman, BABY-SIT - towards a situation-theoretic computational environment, in *Current Issues in Mathematical Linguistics*, C Martin-Vide, ed, 299-308, North-Holland (1994)

[1] Bart Veth is an obsolete pseudonym denoting (in alphabetical order): V Akman, P Bernus, PJW ten Hagen, JLH Rogier, T Tomiyama, PJ Veerkamp

14. E Tin, V Akman, Information-oriented computation with BABY-SIT, in *Logic, Language and Computation 1*, J Seligman, D Westerstahl, eds, 19-34, CSLI Lecture Notes, Vol 58 (1996)
15. V Akman, Notions and oracles, in *The Role of Pragmatics in Contemporary Philosophy*, vol 1, P Weingartner, G Schurz, G Dorn, eds, 3-9, Austrian Ludwig Wittgenstein Society (1997)
16. B Say, V Akman, An information-based treatment of punctuation in discourse representation theory, in *Mathematical & Computational Analysis of Natural Language*, C Martin-Vide, ed, 359-373, John Benjamins (1998)
17. NA Sisman, FN Alpaslan, V Akman, A neuro-fuzzy MAR algorithm for temporal rule-based systems, *Proc Joint Meeting of 3rd World Multiconf on Systemics, Cybernetics & Informatics (SCI'99) and 5th Int Conf on Information Systems Analysis & Synthesis (ISAS'99)*, vol 8, M Torres, B Sanchez, B Wills, eds, 87-92, Int Institute of Informatics & Systemics, Orlando (1999)
18. V Akman, Contesti in intelligenza artificiale: una fugace rassegna, in *La Svolta Contestuale*, C Penco, ed, 147-166, McGraw-Hill, Milano (2002)
19. AP Saygin, I Cicekli, V Akman, Turing test: 50 years later, in *The Turing Test: The Elusive Standard of Artificial Intelligence*, JH Moor, ed, 23-78, Kluwer Academic (2003)
20. Sabuncu, FN Alpaslan, V Akman, Using criticalities as a heuristic for answer set programming, in *Logic Programming and Nonmonotonic Reasoning*, V Lifschitz, I Niemela, eds, 234-246, Lecture Notes in Artificial Intelligence, Vol 2923, Springer-Verlag (2004)
21. T Yilmaz, U Gudukbay, V Akman, Modeling and visualization of complex geometric environments, in *Geometric Modeling*, M Sarfraz, ed, 4-30, Kluwer Academic (2004)
22. V Akman, Situation semantics, in *Encyclopedia of Language & Linguistics (2nd edn)*, K Brown, ed, 398-401, Elsevier (2006)
23. V Akman, Identity; Logical connectives; Vagueness (3 articles), in *Continuum Encyclopedia of British Philosophy*, A Grayling, A Pyle, N Goulder, eds, 1610-1611, 1939-1940, 3260-3261, Thoemmes Continuum (2006)
24. V Akman, Similar situations, in *Context and Appropriateness*, A Fetzer, ed, 31-54, John Benjamins (2007)
25. V Akman, On a proposal of Strawson concerning context vs 'what is said,' in *Perspectives on Contexts*, P Bouquet, L Serafini, RH Thomason, eds, 79-94, CSLI Lecture Notes, Vol 180 (2008)
26. V Akman, Situated semantics, in *The Cambridge Handbook of Situated Cognition*, P Robbins, M Aydede, eds, 401-418, Cambridge University Press (2009)
27. V Akman, Situational semantics, in *Key Ideas in Linguistics and the Philosophy of Language*, S Chapman, C Routledge, eds, 209-212, Edinburgh University Press (2009)
28. E Sahin, V Akman, Analogy-making in situation theory, in *Artificial Intelligence*, RB Bernstein, WN Curtis, eds, 299-321, Nova Science Publishers (2009)

Book Reviews

1. PH Winston, RH Brown, eds, *Artificial Intelligence*; reviewed in *ACM SIGART News*: 24-27 (1985)
2. GL Steele, Jr, DR Woods, RA Finkel, MR Crispin, RM Stallman, GS Goodfellow, *The Hacker's Dictionary*; reviewed in *IEEE Software* 2: 110 (1985)
3. K Mehlorn, *Data Structures and Algorithms 3*; reviewed in *ACM Computing Revs* 26: 210-211 (1985)
4. R Sedgewick, *Algorithms*; reviewed in *IEEE Software* 2: 104 (Nov 1985)
5. JU Korein, *A Geometric Investigation of Reach*; reviewed in *ACM Computing Revs* 28: 191 (1987)
6. JR Woodwark, ed, *Geometric Reasoning*; reviewed in *Computer-Aided Design* 22(10): 675-676 (1990)
7. GA Agha, *ACTORS*; reviewed in *AI Mag* 11(4): 92-93 (1990)
8. B D'Ambrosio, *Qualitative Process Theory Using Linguistic Variables*; reviewed in ACM SIGART Bull 2(2): 25-27 (1991)
9. PD Mosses, *Action Semantics*; reviewed in *J Logic & Computation* 3(4): 442-444 (1993)
10. A Nerode, RA Shore, *Logic for Applications*; reviewed in *ACM SIGACT News* 26(1): 20-22 (1995) [w/ E Tin]
11. C Allen, M Hand, *Logic Primer*; reviewed in *J Logic & Computation* 5(2): 251-253 (1995)
12. H Kamp, U Reyle, *From Discourse to Logic*; reviewed in *Computational Linguistics* 21(2): 265-268 (1995)
13. V Lifschitz, ed, *Formalizing Common Sense*; reviewed in *Artificial Intelligence* 77(2): 359-369 (1995)
14. J Lyons, *Linguistic Semantics*; reviewed in *Natural Language Eng* 3(1): 92-95 (1997)
15. J Barwise, L Moss, *Vicious Circles*; reviewed in *J Logic, Language & Information* 6(4): 460-464 (1997)
16. J Haugeland, ed, *Mind Design II*; reviewed in *ACM SIGART Bull* 9(3-4): 33-36 (1998)

17. J van der Does, J van Eijck, eds, *Quantifiers, Logic & Language*; reviewed in *Natural Language Eng* 4(4): 368-370 (1998)
18. R Cole, J Mariani, H Uszkoreit, A Zaenen, V Zue, eds, *Survey of the State of the Art in Human Language Technology*; reviewed in *Computational Linguistics* 25(1): 161-164 (1999)
19. DV McDermott, *Mind & Mechanism*; reviewed in *Artificial Intelligence* 151(1-2): 227-235 (2003)

Letters to Editor

1. V Akman, Computer science and the classics, *Comm ACM* 29(10): 928 (1986)
2. V Akman, Untitled, *AI Mag* 10(1): 9-12 (1989)
3. V Akman, PJW ten Hagen, Fronti nulla fides, *AI Mag* 11(1): 10-11 (1990)
4. V Akman, Protect our children, *Newsweek* 128(14): 7E (30 Sep 1996)