

Publication List

Eero Hyvönen

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1 Theses

1. Hyvönen, E.: *Verkkokieliin perustuvan Editor-ohjelmiston suunnittelu ja toteutus* (Design and implementation of an editor based on graph grammars). Master's Thesis, Helsinki University of Technology, Department of Electrical Engineering, Digital Systems Laboratory, Espoo, 1981.
2. Hyvönen, E.: *A Graph Grammar Formalism and Parsing Scheme for Graph Language Transformations*. Licentiate Thesis, Helsinki University of Technology, Department of Electrical Engineering, Digital Systems Laboratory, Espoo, 1984.
3. Hyvönen, E.: *Constraint Reasoning with Incomplete Knowledge. The Tolerance Propagation Approach*. Doctoral Dissertation. VTT Publications 72, Technical Research Centre of Finland, Espoo, 1991.

2 Scientific and technical papers

2.1 Graph grammars

International conference papers

4. Heinonen, R., Hyvönen, E.: A Structural Text Editor Based on Graph Grammars. Proceedings of the 7th Conference on Graph Theoretic Concepts in Computer Science (WG81), June 15-17, 1981, Linz, Austria, 1982. (Name of the latter author is mistakenly missing in the proceedings.)
5. Heinonen, R., Hyvönen, E.: Interfacing and Transforming Knowledge Bases in a Graph Grammar Based Documentation System. Proceedings of the Int. Workshop on Graphtheoretic Concepts in Computer Science WG83, Universitätsverlag Rudolf Trauner, Linz, Germany. Also: Report B24, Helsinki University of Technology, Digital Systems Laboratory, 1983.

Other reports

6. Heinonen, R., Hyvönen, E., Karvinen, J.: A Graph Manipulation System. Report B16, Helsinki University of Technology, Digital Systems Laboratory, 1981.
7. Heinonen R., Hyvönen, E., Karvinen, J.: An Interactive User Interface for a Graph Manipulation System. Report B17, Helsinki University of Technology, Digital Systems Laboratory, 1981.
8. Heinonen, R., Hyvönen, E.: A Structural Programmable Text Editor Based on Graph Grammars. Report B18, Helsinki University of Technology, Digital Systems Laboratory, 1982.

2.2 Natural language processing and understanding

International journal articles

9. Hyvönen, E.: Applying a Logical Interpretation of Graph Grammars to Natural Language Parsing and Understanding. *Synthese* 66, No.1, 1986, pp. 177-190.

International conference papers

10. Hyvönen, E.: Graph Grammar Approach to Natural Language Parsing and Understanding. *Proceedings of the 8th IJCAI*, 8.-12.8, Karlsruhe, 1983.
11. Hyvönen, E.: Semantic Parsing as Graph Language Transformation - A Multidimensional Approach to Natural Language Parsing. *Proceedings of COLING-84*, Stanford University, Calif., USA, 1984.
12. Hyvönen, E.: A Hierarchic Relational Grammar Formalism for Natural Language Parsing. In Hyvönen, E., Seppänen, J. and Syrjänen, M. (eds): *STeP-84 Symposium Papers*. Publications of Finnish Society of Information Processing Science, No 4, Espoo, 1984, pp. 260-275.

Other scientific papers

13. Hyvönen, E.: Verkkokielimenetelmä suomenkielen semanttisen jäsentämisen ja ymmärtämisen kuvaamiseksi (A graph grammar based method for semantical parsing and understanding Finnish). Lauseenjäsennyksen perusteet, seminaari Seilissä, Suomen kielitieteellisen yhdistyksen julkaisuja, Turku 1982.
14. Hyvönen, E.: Suomenkielen automaattinen tulkinta tietokoneella (Natural Finnish understanding by computer). Suomen sääätötekn. seuran julkaisu 10, Vol. 3, 1984, pp. 493-512.
15. Hyvönen, E.: Tietojenkäsittelyteorian käsite rakenteet ja luonnollisen kielen ymmärtämisen mallittaminen (Concepts of computer science in modelling natural language understanding). Psykologingvistisiä kirjoituksia 3, AFinLan julkaisuja No 34, Jyväskylä, 1982. Also: Raportti A14, Helsinki University of Technology, Digital Systems Laboratory, 1982.
16. Hyvönen, E.: Suomenkielen automaattinen tulkinta verkkokielen avulla — ensimmäisiä tuloksia (Natural Finnish understanding by using graph grammars — First results). Raportti A16, Helsinki University of Technology, Digital Systems Laboratory, 1982.

2.3 Knowledge representation and uncertain inference**International books and conference proceedings**

17. Hyvönen, E.: Risk Management of Software Projects Based on Causal Knowledge Models. *Proceedings of the European Software Cost Modelling Meeting*, München, 1992, 16 pp.
18. Hyvönen, E.: Forms of Introspection in Machine Intelligence. Paper presented at the 5th Finnish-Soviet Logic Symposium on Logical Theory of Propositional Attitudes and their Applications, Tampere, 26.-28.5.1987. Helsinki University of Technology, Systems Analysis Laboratory, Research Report A21, 1987.
19. Hyvönen, E., De Pascale, S.: A Function Evaluator for Imprecise Numerical Inference. *Proceedings of Scandinavian AI Conference 1995*, IOS Press, Amsterdam, 1995.
20. Hyvönen, E.: Interval input and output. In S. Dietrich, A. Facius, N. Bierlox (eds.) *International Symposium on Scientific Computing, Computer Arithmetic*,

and Validated Numerics (SCAN 2000), Abstracts. Institut fuer Angevandte Mathematic, Universität Karlsruhe, Germany, 2000, pp. 148-149.

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[See also papers below on constraint reasoning techniques.]

Other papers

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23. Hyvönen, E.: Epätäsmällisyyden muodot ja käsitteistö tietämysjärjestelmissä (Forms and concepts of uncertainty in knowledge-based systems). In: Ruusunen J., Hämäläinen R. (eds): *Päätöksenteosta tekoälyyn*. Helsinki University of Technology, Systems Analysis Laboratory, 1987.
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25. Hyvönen, E.: Epätäsmällinen tietämys (Representing uncertainty). In: Hyvönen E., Karanta I., Syrjänen M. (eds): *Tekoälyn ensyklopedia* (Encyclopedia of Artificial Intelligence), Gaudeamus, Helsinki, 1993.
26. Hyvönen, E.: Tietämyksen rakenteen esittäminen (Structured knowledge representation). In: Hyvönen E., Karanta I., Syrjänen M. (eds): *Tekoälyn ensyklopedia* (Encyclopedia of Artificial Intelligence), Gaudeamus, Helsinki, 1993.

2.4 Functional, Lisp and AI programming

[See also text-books on Lisp programming and knowledge engineering in section Textbooks]

27. Hyvönen, E., Karvinen, J.: An Implementation of the Lispkit Lisp System. Report C3, Helsinki University of Technology, Digital Systems Laboratory, 1981.
28. Priha, I., Hämäläinen, M., Hiirsalmi, M., Hyvönen, E.: Tools for Building Knowledge-Based Systems. Research Note 916, Technical Research Centre of Finland, 1988, 147 p.
29. Hyvönen, E., Seppänen, J.: Lisp-kieli ja tietopohjainen ohjelmointi (Lisp Language and Knowledge-Based Programming). In: *Rakennetun ympäristön tutkimuksia T2, Tietopohjaisen suunnittelun symposium TIPS-84*, Arkkitehtiosasto, Teknillinen korkeakoulu, Espoo, 1986, pp.59-68.
30. Hyvönen, E., Seppänen, J.: Katsaus Lisp-kielen historiaan ja kehitykseen (Overview of the history and development of Lisp). In: Hyvönen, E., Seppänen, J.

and Syrjänen, M. (eds): STeP-84 Symposium Papers. Publications of Finnish Society of Information Processing Science, No 4, Espoo, 1984. Also: Katsaus No 6, Helsinki University of Technology, Computing Centre.

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32. Hyvönen, E.: Lisp-järjestelmät (Lisp systems). AI Systems Oy:n seminaari Asiantuntijajärjestelmien kehittämisvälineet, 8-9.5.1985, Helsinki, 1985.

2.5 Constraint reasoning

International journal articles

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35. Hyvönen, E.: Constraint Reasoning Based on Interval Arithmetic. *Proceedings of IJCAI-89*, Detroit, 1989, pp. 1193-1198.
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Other papers

43. Hyvönen, E.: Tolerance Constraint Satisfaction. Technical Paper TR-90-8, Electrotechnical Laboratory, Cognitive Science Section, Japan, 1990.
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2.6 Constraint programming**Invited international paper**

46. Hyvönen, E., De Pascale, S., Lehtola, A.: Interval Constraint Programming in C++, In: Mayoh, B., Tuygu, E., Penjam, J. (Eds.): *Constraint Programming* NATO ASI Series, Vol. F131, Springer-Verlag, Berlin, 350-366, 1994.

Journal papers

47. Hyvönen, E., De Pascale, S.: InC++ Library Family for Interval Computations. *International Journal of Reliable Computing*, supplement, Proceedings of Applications of Interval Computations, El Paso, Texas, USA, 1995.

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48. Hyvönen, E., De Pascale, S.: C++ Libraries for Interval Computations, *Proceedings of STeP-94*, Finnish AI Society, Espoo, 1994, pp. 202-206.
49. Hyvönen, E., De Pascale, S.: C++ Libraries for Interval Programming. *Proceedings of Florida AI Research Symposium*, Melbourne Beach, Florida, 1995.
50. Chan S., Hyvönen, E.: Application of constraint logic solving to generation rejection in electrical power utility. *Proceedings of STeP 2000*, Vol 2, AI of Today. Publications of the Finnish AI Society, No 16, Espoo, Finland, 2000, pp.167-173.

System descriptions, manuals

51. Hyvönen, E., De Pascale, S.: ICE InC++: A library for interval constraint equations. Research Report, VTT, Technical Research Centre of Finland, Laboratory for Information Processing, Helsinki, Finland, 1994.

2.7 Financial engineering and spreadsheet computations**International journals and books**

52. Hyvönen, E.: Spreadsheets Based on Interval Constraint Satisfaction. *Artificial Intelligence for Engineering Design, Analysis and Manufacturing* 8, No. 1, 1994, pp. 27-34.

53. Hyvönen, E., De Pascale, S.: Interval Constraint Spreadsheets — An Implementation for MS Excel. *International Journal of Reliable Computing*, supplement, Proceedings of Applications of Interval Computations, El Paso, Texas, USA, 1995.
54. Hyvönen, E., De Pascale, S.: Interval Computations on the Spreadsheet. In: B. Kearfott, V. Kreinovich (eds.), *Applications of Interval Computations*, Kluwer, New York, 1996, 169-210.
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56. Hyvönen, E., Interval Constraint Solver for Microsoft Excel. *Computational Logic*, Vol. 4, No 1, 1998, pp. 61.
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International conference papers

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Other papers and manuals

64. De Pascale, S., Hyvönen, E.: An Extended Interval Arithmetic Library for MS Excel. VTT, Technical Research Centre of Finland, Information Technology, Espoo, 1994.
65. Hyvönen E., De Pascale S.: Range Solver for MS Excel, User's Guide, Version 1.0. VTT Information Technology, Espoo, Finland, 1996.
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2.8 Interval arithmetic and algebra

International conferences

67. Hyvönen E., De Pascale S.: Complement and Discontinuous Interval Arithmetic, International Conference on Interval and Computer-Algebraic Methods in Science and Engineering (INTERVAL '94), Abstracts, St. Petersburg, Russia, 1994. pp.119-121.
68. Hyvönen E., De Pascale S.: Applying Computer Algebra to Interval Function Evaluation, International Conference on Interval and Computer-Algebraic Methods in Science and Engineering (INTERVAL '94), Abstracts, St. Petersburg, Russia, 1994. pp.116-118.
69. Hyvönen, E.: Evaluation of Cascaded Interval Function Constraints. *Proceedings of Workshop on Constraint-Based Reasoning, Florida AI Research Symposium*, Melbourne Beach, Florida, 1995.

System descriptions, manuals

70. Hyvönen, E., De Pascale, S.: LIA InC++: A local interval arithmetic library, Research Report, VTT, Technical Research Centre of Finland, Information Technology, Espoo, Finland, 1994.
71. Hyvönen, E., De Pascale, S.: GIA InC++: A global interval arithmetic library, Research Report, VTT, Technical Research Centre of Finland, Information Technology, Helsinki, Finland, 1994.
72. Hyvönen, E., De Pascale, S.: CIF InC++: A library for cascaded interval function evaluation, Research Report, VTT, Technical Research Centre of Finland, Information Technology, Helsinki, Finland, 1994.

2.9 Computer algebra and differentiation

International books

73. Hyvönen E., De Pascale, S.: Shared Computations for Efficient Interval Function Evaluation. In: G. Alefeld, E. Frommer (eds.): *Scientific Computing, Computer Arithmetic and Validated Numerics*, Akademie-Verlag, Berlin, Germany, 1996.

2.10 Simulation, artificial life

International journals

74. Pesonen J., Hyvönen E. Interval Approach Challenges Monte Carlo Simulation. *Reliable Computing*, Vol. 2, Nr. 2, 1996, 155-160.

Conferences

75. Hyvönen, E., Keinoelämä — Elämän formalismeja ja formalismien elämää (Artificial Life — Formalisms of life and living formalisms). In: *Artificial Life*, Publications of Finnish AI Society, 1995.

2.11 Internet and the Semantic Web

Conferences

76. Hyvönen E.. Semantic Web -- koti uutta merkitysten Internetiä (Semantic Web -- towards the new Internet of meanings). Paper presented at the Semantic Web Kick-Off Seminar, University of Helsinki and Helsinki Institute for Information Technology, Helsinki, October 2, 2001.
77. Hyvönen E.. Semantic Web - The new Internet of meanings. In: Semantic Web Kick-Off in Finland - Vision, Technologies, Research, and Applications, HIIT Publications, 2002-001, Helsinki Institute for Information Technology (HIIT), Helsinki, Finland, 2002.
78. Hyvönen E., P. Harjula, Viljanen K.. Representing metadata about web resources. In: Semantic Web Kick-Off in Finland - Vision, Technologies, Research, and Applications, HIIT Publications, 2002-001, Helsinki Institute for Information Technology (HIIT), Helsinki, Finland, 2002.
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80. J. Haajanen, Hyvönen E., P. Takala. Generic eBusiness standards for web services. In: Semantic Web Kick-Off in Finland - Vision, Technologies, Research, and Applications, HIIT Publications, 2002-001, Helsinki Institute for Information Technology (HIIT), Helsinki, Finland, 2002.
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82. Hyvönen E., Kettula S., Raatikka V., Viljanen K.. Cultural Semantic Interoperability on the Web. Case Finnish Museums Online. Proc. of the 1st International Semantic Web Conference, late-breaking posters, 2002.
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84. Hyvönen E., A. Styrman, Saarela S.: Ontology-Based Image Retrieval. In: Towards the semantic web and web services, Proceedings of XML Finland 2002 Conference. pp. 15-27.
85. Hyvönen E., Viljanen K., A. Hättinen: Yellow Pages on the Semantic Web. In: Towards the semantic web and web services, Proceedings of XML Finland 2002 Conference. pp. 3-14.
86. Raatikka V., Hyvönen E.: Ontology-Based Semantic Metadata Validation. In: Towards the semantic web and web services, Proceedings of XML Finland 2002 Conference. pp. 28-40.

87. Hyvönen E., Klemettinen M. (eds.) Towards the Semantic Web and Web Services. Proceedings of the XML Finland 2002 Conference. HIIT Publications 2002-03, Helsinki, 2002.
88. Hyvönen E., Saarela S., Styrman A., Viljanen K.: Ontology-Based Image Retrieval. Poster Proceedings, The Twelfth International World Wide Web Conference (WWW2003), 20-24 May 2003, Budapest, Hungary.
89. Hyvönen E., Viljanen K., Häätinen A.: Yellow Pages on the Semantic Web. Proceedings, Posters, The Twelfth International World Wide Web Conference (WWW2003), 20-24 May 2003, Budapest, Hungary.
90. Hyvönen E., Kettula S., Raatikka V., Saarela S., Viljanen K.: Finnish Museums on the Semantic Web. Proceedings, Posters, The Twelfth International World Wide Web Conference (WWW2003), 20-24 May 2003, Budapest, Hungary.
91. Hyvönen E., Junnila M., Kettula S., Saarela S., Salminen M., Syreeni A., Valo A., Viljanen K.: Publishing Collections in the "Finnish Museums on the Semantic Web" Portal—First Results. Paper presented at the symposium Arts and Humanities in the Digital Domain: Towards Web based Culture and Science, Salzburg, Austria, Oct. 6-7, 2003. Proceedings of XML Finland 2003, Oct. 30-31, 2003, Kuopio, Finland.
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94. Hyvönen E., Junnila M., Kettula S., Mäkelä E., Saarela S., Salminen M., Syreeni A., Valo A., Viljanen K.: MuseumFinland—Finnish Museums on the Semantic Web. User's perspective. Selected Papers, Proceedings of Museums and the Web 2004 (MW2004), March 29 – April 3, 2004, Virginia, USA.
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96. Hyvönen E., Junnila M., Kettula S., Saarela S., Salminen M., Syreeni A., Valo A., Viljanen K.: Publishing Collections in the Finnish Museums on the Semantic Web Portal—The MuseumFinland Portal. Proceedings of WWW2004, New York, poster papers, 2004.
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98. Laukkanen M., Viljanen K., M. Apiola, Lindgren P., Hyvönen E.: Towards Ontology-Based Yellow Page Services. Proceedings of WWW2004 Workshop, Application, Design, Development, and Implementation Issues, New York, 2004. CEUR Workshop Proceedings, Vol 105, 2004.

99. Hyvönen E., Holi M., Viljanen K.: Designing and Creating a Web Site Based on RDF Content. Proceedings of WWW2004 Workshop, Application, Design, Development, and Implementation Issues, New York, 2004. CEUR Workshop Proceedings, Vol 105, 2004.
100. E. Makelä, Hyvönen E., Saarela S., Viljanen K.: OntoViews -- A Tool for Creating Semantic Web Portals. Proceedings of the 3rd International Semantic Web Conference (ISWC 2004), Hiroshima, Japan, 2004, Springer-Verlag.
101. Korpilahti T., Hyvönen E.: An Architecture for Collaborative Ontology Library Development. Proceedings of 16th European Conference on Artificial Intelligence (ECAI2004), Workshop on Application of Semantic Web Technologies to Web Communities, Valencia, Spain, 2004. CEUR Workshop Proceedings, Vol 107, 2004.
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103. Holi M., Hyvönen E.: Probabilistic Information Retrieval Based on Conceptual Overlap in Semantic Web Ontologies. Proceedings of the 11th Finnish AI Conference, Web Intelligence, vol 2., Finnish AI Society, Finland, 2004.
104. Kauppinen T., Hyvönen E.: Bridging the Semantic Gap between Ontology Versions. Proceedings of the 11th Finnish AI Conference, Web Intelligence, vol 2., Finnish AI Society, Finland, 2004.
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111. Kauppinen T., Hyvönen E.: Geo-Spatial Reasoning over Ontology Changes in Time. Proceedings of IJCAI-2005 Workshop on Spatial and Temporal Reasoning, Edinburgh, Scotland, forthcoming, 2005.
112. Kauppinen T., Hyvönen E.: Modeling and Reasoning about Changes in Ontology Time Series. Paper, Springer-Verlag, forthcoming, 2005.
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Journals and magazines

119. Hyvönen E., Mäkelä E., Salminen M., Valo A., Viljanen K., Saarela S., Junnila M., Kettula S.: MuseumFinland -- Finnish Museums on the Semantic Web. *Journal of Web Semantics*, Elsevier, forthcoming, 2005.
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