# Curriculum Vitae

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| *Name:* | Vilém Novák, PhD, DSc., Professor |
| *Employer:* | University of Ostrava |
|  | Institute for Research and Applications of |
|  | Fuzzy Modeling |
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|  | Czech Republic |
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| e-mail: | Vilem.Novak@osu.cz |
| *Born:* | June 21, 1951 in Bruntál (Czechoslovakia) |

*Education*:

- MSc. in System engineering at Mining Technical University, Ostrava (Czechoslovakia), 1975

- Post-gradual course of theoretical cybernetics at Charles University in Prague, Czechoslovakia, 1982

*Degrees*:

- PhD in mathematical logic at Charles University, Prague, 1988

- DSc. (Doctor of Sciences) in computer science at Polish Academy of Sciences, Warsaw, 1995

- Habilitation, associate professor, at Palacký University, Olomouc, 1995

- Full professor at Masaryk University, Brno 2001

*Course of employment*:

- 1995– , University of Ostrava, Czech Republic, professor and director of the Institute for Research and Applications of Fuzzy Modeling and Department of Mathematics, Full Professor

- 1984–1995, Institute of Geonics of the Academy of Sciences of the Czech Republic, Senior Scientist

- 1975–1984, Automation of Management of Ostrava Coal Basin, programmer, system engineer, head of the department of information systems

*Research Activities*:
- mathematical fuzzy logic, theory approximate reasoning,
- modeling of natural language semantics,
- fuzzy control and applications of fuzzy logic.

Author or co-author of over 200 scientific works.
*Books and edited volumes*:

1. Novák, V.: *Fuzzy Sets and Their Applications*, SNTL Publishing House, Prague, 1986 and 1990 (in Czech), Adam–Hilger, Bristol 1989. Awarded a price of the Czech Literal Fund in Prague, 1987.

2. Novák, V.: *The Alternative Mathematical Model of Linguistic Semantics and Pragmatics*, Plenum Publishing Corporation, New York in 1992

3. Novak, V., Perfilieva I. and J. Mockor: *Mathematical Principles of Fuzzy Logic*, Kluwer, Boston/Dordrecht 1999. Translated into Russian, Nauka, Moscow 2006.

4. Foundations of Fuzzy Modeling. BEN, Prague 2000 (in Czech).

5. Novák, V., Ramík, J., Mareš, M., Černý, M., Nekola, J. (eds.), **Fuzzy Approach to Reasoning and Decision–Making**. Kluwer, Dordrecht 1992, Academia, Praha 1992.

6. Novák, V. and I. Perfilieva (eds.): **Discovering the World With Fuzzy Logic**. Springer-Verlag, Heidelberg 2000, 555 pp. (Studies in Fuzziness and Soft Computing, Vol. 57)

Known more than 600 citations of his books and papers.

*Projects in the Czech Republic:*

- Project of the Ministry of Education of the Czech Republic VS 96037 — foundation of the IRAFM institute (1996-2000)

- Grant of GA AV R A1086501 "Algebraic methods in fuzzy logic oriented to control and decision-making" (1995-1997)

- Grant of GA R 201/96/0985 "Methods of learning in fuzzy expert system for control and decision-making" (1996-1998)

- Research plan CEZ:J09/98:179000002 "Modeling of complex systems in fuzzy and uncertain environment" (1999-2004), Ministry of Education of the Czech Republic

- Grant of GA R 201/04/1033 "Approximate reasoning and generalized quantifiers" (2004-2006)

- Research plan MSM 6198898701 "Logical and algebraical methods for precessing of information under uncertainty and their applications in fuzzy modeling" (2005-2010) of the Ministry of Education of the Czech Republic

- Grant of GA AV R IAA108270901 "Cardinality of Fuzzy Sets and Fuzzy Quantifiers" (2009-2011)

*International projects:*

- Research stay "Research in pairs", 1 month, Institut fr Mathematik, Oberwolfach, Germany, Prof. Novk, Prof. Perfilieva (1998)

- Project of Czech-American cooperation in science and technology W-00016, organization of common workshop "Current Trends in Soft Computing" (2001)

- Czech-American cooperation KONTAKT ME-468 "Stratigraphic simulation using fuzzy logic for the modeling of dispersion of sediments" realized in the frame of cooperation on similar NSF project with SUNY, Binghampton, USA

- Czech-Japan cooperation KONTAKT ME-200 "Methods for Decision Support in Environment with Uncertainty" (1998-2000)

- Czech-German cooperation CZE 01/022 "Fuzzy relations as tools for modeling industrial processes" (2001-2003)

- Czech-Japan cooperation KONTAKT ME-604 "Methods for Decision Support in Environment with Uncertainty" (2002-2004)

- Czech-Italian project No. 17 "Fuzzy systems in soft computing methods" (2002-2004)

- Czech-Chinese cooperation KONTAKT ME-702 "Special techniques of soft computing for decision-making in management" (2003-2004)

- Czech-Chinese project in the frame of international cooperation 1P05ME739 "Special techniques of soft computing for decision-making in management" (2005)

*Further activities*:

- General chair of the organizing committee of the *International Symposium on Fuzzy Approach to Reasoning and Decision–Making*, Bechyně (Czech Republic) in 1990

- General chair of the *VII*th *IFSA'97 World Congress* in Prague, June 25–29, 1997.

- General chair of 5th Conference of the European Society for Fuzzy Logic and Technology EUSFLAT 2007 Ostrava, September 11-14, 2007 .

- Guest editor of special issues of international journals (Int. Journal of General Systems, 1991 and 1997, Int. Journal of Advanced Computational Intelligence, 1997, Soft Computing 2002, Fuzzy Sets and Systems 2006, 2008).

- Member of many program committees of international conferences (each year about 2–5).

- Member of editorial boards of the following journals:

1. Soft Computing,

2. Fuzzy Sets and Systems,

3. International Journal of Applied Non-Classical Logics,

4. Journal of Applied Mathematics and Computer Science,

5. Journal of Uncertain Systems,

6. International Journal of Biomedical Soft Computing and Human Sciences,

7. International Journal of Computational Intelligence Systems.

8. The Journal of Advanced Computational Intelligence and Intelligent Informatics

- Invited to Germany, Poland, Hungary, Austria, USA, Italy, Finland, Korea, Japan, Russia, China, Netherlands for lectures and research stays. Visiting professor in the Universities of Trento and Catania in Italy.

- Member of the Society of Czech Mathematicians and Physicists, Czech Cybernetic Society, European Society for Fuzzy Logic and Technology (EUSFLAT). His name is also included in Marqui's *Who is Who in the World.*

**List of selected publications for past 10 years**

[1] R. Bělohlávek, V. Novák, Learning rule base of the linguistic expert systems, Soft Computing 7 (2002) 79–88.

[2] A. Di Nola, A. Lettieri, I. Perfilieva, V. Novák, Algebraic analysis of fuzzy systems, Fuzzy Sets and Systems 158 (2007) 1–22.

[3] A. Dvořák, V. Novák, Fuzzy logic deduction with crisp observations, Soft Computing 8 (2004) 256–263.

[4] A. Dvořák, H. Habiballa, V. Novák, V. Pavliska, The software package LFLC 2000 - its specificity, recent and perspective applications, Computers in Industry 51 (2003) 269–280.

[5] A. Dvořák, V. Novák, Formal theories and linguistic descriptions, Fuzzy Sets and Systems 143 (2004) 169–188.

[6] S. Gottwald, V. Novák, An approach towards consistency degrees of fuzzy theories, Int. J. of General Systems 29 (2000) 499–510.

[7] P. Hájek, V. Novák, The sorites paradox and fuzzy logic, International Journal of General Systems 32 (2003) 373–383.

[8] P. Murinová, V. Novák, Omitting types in fuzzy logic with evaluated syntax, Mathematical logic quarterly 52 (3) (2006) 259–268.

[9] V. Novák, , J. Kovář, Linguistic IF-THEN rules in large scale application of fuzzy control, in: R. Da, E. Kerre (Eds.), Fuzzy If-Then Rules in Computational Intelligence: Theory and Applications, Kluwer Academic Publishers, Boston, 2000, pp. 223–241.

[10] V. Novák, Antonyms and linguistic quantifiers in fuzzy logic, Fuzzy Sets and Systems 124 (2001) 335–351.

[11] V. Novák, Descriptions in the full fuzzy type theory, Neural Network World 5 (2003) 559–565.

[12] V. Novák, Fuzzy logic deduction with words applied to ancient sea level estimation, in: R. Demicco, G. Klir (Eds.), Fuzzy logic in geology, Academic Press, Amsterdam, 2003, pp. 301–336.

[13] V. Novák, Are fuzzy sets a reasonable tool for modeling vague phenomena?, Fuzzy Sets and Systems 156 (2005) 341–348.

[14] V. Novák, On fuzzy type theory, Fuzzy Sets and Systems 149 (2005) 235–273.

[15] V. Novák, Perception-based logical deduction, in: B. Reusch (Ed.), Computational Intelligence, Theory and Applications, Springer, Berlin, 2005, pp. 237–250.

[16] V. Novák, Which logic is the real fuzzy logic?, Fuzzy Sets and Systems 157 (2006) 635–641.

[17] V. Novák, Fuzzy logic with countable evaluated syntax revisited, Fuzzy Sets and Systems 158 (2007) 929–936.

[18] V. Novák, Mathematical fuzzy logic in modeling of natural language semantics, in: P. Wang, D. Ruan, E. Kerre (Eds.), Fuzzy Logic – A Spectrum of Theoretical & Practical Issues, Elsevier, Berlin, 2007, pp. 145–182.

[19] V. Novák, A formal theory of intermediate quantifiers, Fuzzy Sets and Systems 159 (10) (2008) 1229–1246.

[20] V. Novák, A comprehensive theory of trichotomous evaluative linguistic expressions, Fuzzy Sets and Systems 159(2008), 2939-2969.

[21] V. Novák, I. Perfilieva, On the semantics of perception-based fuzzy logic deduction, International Journal of Intelligent Systems 19 (2004) 1007–1031.

[22] V. Novák, I. Perfilieva, A. Dvořák, G. Chen, Q. Wei, P. Yan, Mining pure linguistic associations from numerical data, Int. Journal of Approximate Reasoning 48 (2008) 4–22.

[23] I. Perfilieva, V. Novák, System of fuzzy relation equations as a continuous model of IF-THEN rules, Information Sciences 177 (2007) 3218–3227.

[24] I. Perfilieva, V. Novák, A. Dvořák, Fuzzy transform in the analysis of data, Int. Journal of Approximate Reasoning 48 (2008) 36–46.

Ostrava, August 7, 2009