

FACTUAL INFORMATION ABOUT THE IMPACT OF FUZZY LOGIC

L.A. ZADEH

PATENTS

- Number of fuzzy-logic-related patents applied for in Japan: **17,740**
- Number of fuzzy-logic-related patents issued in Japan: **4,801**
- Number of fuzzy-logic-related patents issued in the US: around **1,700**

JOURNALS

Fuzzy in title

1. *Fuzzy Sets and Systems*
2. *IEEE Transactions on Fuzzy Systems*
3. *Fuzzy Optimization and Decision Making*
4. *Journal of Intelligent & Fuzzy Systems*
5. *Fuzzy Economic Review*
6. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*
7. *Journal of Japan Society for Fuzzy Theory and Systems*
8. *International Journal of Fuzzy Systems*
9. *International Review of Fuzzy Mathematics*
10. *Fuzzy Systems and Soft Computing*

COUNT of PUBLICATIONS

- Count of publications containing the word “fuzzy” in the title, as cited in INSPEC and MATH.SCI.NET databases.
Compiled March 6, 2008.

INSPEC Database

1970-1979: **569**
1980-1989: **2,375**

1990-1999: **21,563**
 2000-present: **27,457**
 Total: **51,964**

MathSciNet Database

1970-1979: **443**
 1980-1989: **2,465**
 1990-1999: **5,487**
 2000-present: **7,385**
 Total: **15,780**

- Number of citations of papers by L.A. Zadeh (Science Citation Index): **15,897**
- 2004 journal citations of papers in the literature of philosophy of science and philosophy of logic. (Compiled by Professor Ronald Loui, Washington University, St. Louis, in "A Citation-Based Reflection on Toulmin and Argument," *Argumentation*, 19:259-266, 2005.)

1. L. Zadeh 870
2. T. Kuhn 543
3. W. Quine 271
4. H. Putnam 262
5. J. Austin 224
6. S. Kripke 182
7. A. Tarski 139
8. S. Toulmin 130
9. A. Whitehead 123
10. J. Girard 113
11. J. Barwise 112
12. I. Lakatos 112
13. M. Bunge 111
14. R. Carnap 107
15. C. Hempel 99
16. H. Reichenbach 95
17. N. Rescher 94
18. P. Gardenfors 88
19. R. Stalnaker 87
20. J. Hintikka 80
21. P. Feyerabend 79
22. N. Cartwright 79
23. P. Suppes 77
24. A. Ayer 72
25. G. Vonwright 61
26. M. Fitting 58
27. S. Kleene 56
28. A. Church 50
29. P. Geach 47

30. I. Levi 47

- Total number of journal citations of most cited papers.

1. T. Kuhn, structure science, 12364
2. L. Zadeh, fuzzy sets, 6085
3. I. Lakatos, criticism growth kno, 2197
4. J. Austin, how do things words, 1975
5. W. Quine, word object, 1853
6. H. Putnam, reason truth hist, 863
7. C. Hempel, aspects of sci expl, 854
8. P. Feyerabend, against method, 851
9. S. Toulmin, uses of argument, 669
10. S. Kleene, intro metamath, 640
11. J. Girard, theoretical computer, 636
12. A. Whitehead, sci modern world, 540
13. J. Barwise, situations attitudes, 477
14. S. Kripke, naming necessity, 463
15. A. Tarski, pac j math, 432
16. J. Hintikka, knowledge belief, 407
17. H. Reichenbach, elements symbolic lo, 404
18. P. Gardenfors, knowledge flux, 390
19. G. Vonwright, explanation understa, 366
20. M. Bunge, treatise basic phil, 362
21. N. Cartwright, how laws physics lie, 300
22. P. Martinlof, inform control, 287
23. C. Alchourron, j symbolic logic, 276
24. P. Suppes, probabilistic theory, 251
25. I. Levi, enterprise knowledge, 248
26. N. Rescher, many valued logic, 244
27. A. Church, j symbolic logic, 236
28. R. Carnap, meaning necessity, 231
29. A. Ayer, language truth logic, 215
30. B. Chellas, modal logic intro, 198

APPLICATIONS

The range of application-areas of fuzzy logic is too wide for exhaustive listing. Following is a partial list of existing application-areas in which there is a record of substantial activity.

1. Industrial control
2. Quality control

3. Elevator control and scheduling
 4. Train control
 5. Traffic control
 6. Loading crane control
 7. Reactor control
 8. Automobile transmissions
 9. Automobile climate control
 10. Automobile body painting control
 11. Automobile engine control
 12. Paper manufacturing
 13. Steel manufacturing
 14. Power distribution control
 15. Software engineering
 16. Expert systems
 17. Operation research
 18. Decision analysis
 19. Financial engineering
 20. Assessment of credit- worthiness
 21. Fraud detection
 22. Mine detection
 23. Pattern classification
 24. Oil exploration
 25. Geology
 26. Civil Engineering
 27. Chemistry
 28. Mathematics
 29. Medicine
 30. Biomedical instrumentation
 31. Health-care products
 32. Economics
 33. Social Sciences
 34. Internet
 35. Library and Information Science
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