PUBLICATIONS
ZOLTÁN KÁTAI

MOST RELEVANT PUBLICATIONS [Categories: A/B/C/D, according to http://informatica-universitaria.ro]

1. **[C] Kátai, Z.**, Dynamic programming strategies on the decision tree hidden behind the optimising problems, *Informatics in Education*, 6, 2007, 1, 115–138.
2. **[A] Kátai, Z.**, Juhász, K., Adorjáni, A., K., On the role of senses in education, *Computers & Education*, 51, 2008, 4, 1707–1717.
3. **[B] Kátai, Z.**, Toth, L.,Technologically and artistically enhanced multi-sensory computer programming education, *Teaching and teacher education,* 26, 2010, 2, 244–251.
4. **[C] Kátai, Z.**, Multi-sensory method for teaching-learning recursion, *Computer Applications in Engineering Education*, 19, 2011, 2, 234–243.
5. **[C] Kátai, Z.**, Solving Markov Decision Processes by d-Graph Algorithms, *Control and Cybernetics*, 41, 2012, 3, 577–593.
6. **[A] Kátai, Z.**, The challenge of promoting algorithmic thinking of both sciences and humanities oriented learners, *Journal of Computer Assisted Learning,* 2014. (doi>10.1111/jcal.12070)
7. **[A] Kátai, Z.**, Intercultural Computer Science Education, *Proceedings of the 2014 conference on Innovation & technology in computer science education*, ACM New York, NY, USA, 2014, 183–188. (doi>10.1145/2591708.2591744)
8. **[A] Kátai, Z.**, Selective Hiding for Improved Algorithmic Visualization, *Proceedings of the 2014 conference on Innovation & technology in computer science education*, ACM New York, NY, USA, 2014, 33–38. (doi>10.1145/2591708.2591734)
9. **[A] Kátai, Z.**, ALGO-RYTHMICS: science and art without ethnic borders, *Proceedings of the 2014 conference on Innovation & technology in computer science education*, ACM New York, NY, USA, 2014, 329–329. (doi>10.1145/2591708.2602684) (poster)
10. **[A] Kátai, Z.**, Algorithmic Thinking for ALL: a motivational perspective, *Proceedings of the 2014 conference on Innovation & technology in computer science education*, ACM New York, NY, USA, 2014, 353–353. (doi>10.1145/2591708.2602669) (poster)
11. **[C] Kátai, Z.**, Mutisensori Informatics Education, *Informatics in Education*, 13, 2014, 2. (in press) [SCOPUS (Elsevier), Zentralblatt]

PhD Thesis

1. *Didactical methods and tools for improving computer science education*, 2007, Debrecen University. (PhD in Mathematics and Computer Sciences)

Textbooks

1. Kátai Zoltán, *C programming (Programozás C nyelven),* Scientia, Cluj-Napoca, 2004, ISBN 973-7953-27-4, 240 pages. (in Hungarian)
2. Kátai Zoltán, *Algorithm design strategies* (*Algoritmusok felülnézetből)*, Scientia, Cluj-Napoca, 2007, ISBN 978-973-7953-74-2, 251 pages. (in Hungarian)
3. Kátai Zoltán, *Graph algorithms (Gráfelméleti algoritmusok)*, Scientia, Cluj-Napoca, 2008, ISBN 978-973-7953-95-7, 248 pages. (in Hungarian)
4. Kátai Zoltán, *C: language and programming (C: nyelv és programozás)*, Debrecen University, Hungary, 2008, 270 pages. (in Hungarian)
5. Nyakóné Juhász Katalin, Terdik György, Biró Piroska, Kátai Zoltán, *Introduction to Informatics (Bevezetés az informatikába)*, Debrecen University, Hungary, 2011. (in Hungarian)

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Journal Papers

Journals indexed by Thompson ISI

1. Kátai, Z., Juhász, K., Adorjáni, A., K., On the role of senses in education, *Computers & Education* (2008), Vol. 51, No 4, 1707-1717, ISSN: 0360-1315. (IF_{2008} 2.19)
2. Kátai, Z., Toth L., Technologically and artistically enhanced multi-sensory computer programming education, *Teaching and teacher education* 26 (2010), 244-251, ISSN: 0742-051X. (IF_{2010} 1.124) doi:10.1016/j.tate.2009.04.012.
3. Kátai, Z., Multi-sensory method for teaching-learning recursion, *Computer Applications in Engineering Education* (2011), Vol. 19, No. 2, 234–243, ISSN: 1061-3773. (IF_{2011} 0.333) doi:10.1002/cae.20305
4. Kátai, Z., Solving Markov Decision Processes by d-Graph Algorithms, *Control and Cybernetics* (2012), Vol. 41, No 3, ISSN: 0324-8569.
5. Kátai, Z., The challenge of promoting algorithmic thinking of both sciences and humanities oriented learners, *Journal of Computer Assisted Learning,* 2014. (IF_{2014} 1.632) (doi>10.1111/jcal.12070)

Journals indexed in international databases

1. Kátai Zoltán, "Upperview" algorithm design in teaching computer science in high schools, *Teaching Mathematics and Computer Science*, 3 (2005) 2, 221-241, ISSN: 15897389. [Zentralblatt, MathDi, 2006b.00869]
2. Kátai Zoltán, Proof without words, *Teaching Mathematics and Computer Science*, 3 (2005) 2, 331, ISSN: 15897389.
3. Kátai Zoltán, Dynamic programming and d-graphs, *Studia Universitatis Babes-Bolyai - Series Informatica*, LI (2006) 2, 41-52, ISSN: 1224869X. [Zmath, Zbl 1118.90324]
4. Kátai Zoltán, Dynamic programming strategies on the decision tree hidden behind the optimising problems, *Informatics in Education*, Institute of Mathematics and Informatics, Lithuania, 6 (2007) 1, 115-138, ISSN: 16485831. [SCOPUS (Elsevier), ME 2010c.005kl23 io-port 50212215 Zentralblatt]
5. Kátai Zoltán, „Frontier algorithms", *Teaching Mathematics and Computer Science*, 6

(2008) 1, ISSN: 15897389. [ME 2009e.00684 Zentralblatt]

6. Kátai Zoltán, Dynamic programming as optimal path problem in weighted digraphs, Acta Mathematica Academiae Paedagogicae Nyíregyháziensis, 2008(2), 201-208, ISSN: 1786-0091. [ElibM, io-port 05530093 Zentralblatt]

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7. Kátai Zoltán, The single-source shortest paths algorithms and the dynamic programming, *Teaching Mathematics and Computer Science*, 6 (2008) INFODIDACT, 25-35, ISSN: 15897389.

8. Zsakó László, Nyakóné Juhász Katalin, Kátai Zoltán, ICT-Methodology, *Teaching Mathematics and Computer Science*, 6 (2008) INFODIDACT, 3-24, ISSN: 15897389.

9. Kátai Zoltán, Kovács István Lehel, Towers of Hanoi – where programming techniques blend, *Acta Universitatis Sapientiae, Informatica*, Vol. 1, No. 1, 89-108, 2009, ISSN: 1844-6086. (http://www.acta.sapientia.ro/) [io-port 05562327 Zentralblatt]

10. Kátai Zoltán, Csíki Ágnes, Automated dynamic programming, *Acta Universitatis Sapientiae, Informatica*, Vol. 1, No. 2, 149-164, 2009, ISSN: 1844-6086. (http://www.acta.sapientia.ro/) [io-port 05605531 Zentralblatt]

11. Kátai Zoltán, Modelling dynamic programming problems by generalized d–graphs, Acta Universitatis Sapientiae, Informatica, Vol. 2, No. 2, 210-230, 2010, ISSN: 1844-6086. (http://www.acta.sapientia.ro/) [io-port 05896714 Zentralblatt]

12. Kátai Zoltán, Kovács Lehel István, Kása Zoltán, Márton Gyöngyvér, Fogarasi Kinga, Fogarasi Ferenc, Cultivating algorithmic thinking: an important issue for both technical and HUMAN sciences, *Teaching Mathematics and Computer Science*, 9 (2011) 1, 1-10, ISSN: 15897389. [Zentralblatt, MathDi]

13. Kása Zoltán, Kátai Zoltán, Scattered subwords and composition of natural numbers, *Acta Universitatis Sapientiae, Informatica*, Vol. 4, No. 2, 225-236, 2012, ISSN: 1844-6086. (http://www.acta.sapientia.ro/)

14. Bege Antal, Kátai Zoltán, Sierpinski-like triangle-patterns in Bi- and Fibo-nomial triangles, *Annales Mathematicae et Informaticae,* 41 (2013), 5-12.

15. Kátai, Z., Mutisensori Informatics Education, *Informatics in Education*, 13, 2014, 2. (in press) [SCOPUS (Elsevier), Zentralblatt]

Conference Papers

1. Kátai Zoltán, How to teach programming techniques? (Hogyan tanítsuk a programozási technikákat?), *Számokt 2004, 14th International Conference In Computer Science And Education*, EMT, 50-56, Cluj-Napoca, Romania, March 25-28, 2004, ISBN: 973860978X. (in Hungarian)

2. Kátai Zoltán, Programming techniques viewed from above (Programozási technikák felülnézetből), *Számokt 2005, 15th International Conference In Computer Science And Education*, EMT, 139-146, Cluj-Napoca, Romania, March 17-20, 2005, ISBN: 9737840011. (in Hungarian)

3. Kátai Zoltán, Algorithm design – Didactical viewpoints (Algoritmus tervezés - Didaktikai szempontok), *Informatika a felső oktatásban (Informatics in high education)*, International conference, 168, Debrecen, Hungary, August 24-26, 2005.

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4. Kátai Zoltán, Máthé Szabolcs, "Who wants to be an eminent?" - Assessment method and software, *Proceedings of the 7th International Conference on Applied Informatics (ICAI 2007)*, Volume 2, 37-44, Eger, Hungary, January 28-31, 2007. (io-port 05662506 Zentralblatt)
5. Kátai Zoltán, Algorithms viewed from above (Algoritmusok felülnézetből), *Informatika a felső oktatásban (Informatics in high education)*, International conference, 117, Debrecen, Hungary, August 27-29, 2008. (in Hungarian)
6. Kátai Zoltán, Tóth László, Algo-rhythmics (Algo-ritmika), *Számokt 2008, 18th International Conference In Computer Science*, EMT, 160-165, Şumulea-Ciuc, Romania, October 10-12, 2008, ISSN 1842-4546. (in Hungarian)
7. Kovács Lehel István, Kátai Zoltán, What techniques can be used to solve the Towers of Hanoi puzzle? (Milyen programozási technikákkal oldható meg a Hanoi tornyai feladat?), *Számokt 2008, 18th International Conference In Computer Science*, EMT, 185-192, Şumulea-Ciuc, Romania, October 10-12, 2008, ISSN 1842-4546. (in Hungarian)
8. Kása Z., Kátai Z., Application of shortest path algorithms in networks, *2nd International Economic Conference,* April 2-3, 2009, Kaposvár, Hungary. (in Hungarian)
9. Kátai Zoltán, „Cocktail-learning" at Sapientia University („Cocktail-learning" a marosvásárhelyi Sapientian), *Számokt 2009, 19th International Conference In Computer Science*, EMT, 243-246, Tirgu Mures, Romania, October 8-11, 2009, ISSN 1842-4546. (in Hungarian)
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11. Kátai Zoltán, Solving Markov Decision Processes by d-graph algorithms, *Proceedings of the 3rd International Conference on Recent Achievements in Mechatronics, Automation, Computer Sciences and Robotics (MACRo2011)*, 63-74, Tirgu Mures, Romania, April 8-9, 2011, ISBN 978-973-1970-54-7.
12. Kátai Zoltán, Füzesi Albert, Bubble-sort with "Csángó" folk dance, „*Mathematics, Music, Art, Architecture, Culture", Bridges Conference (Short Movie Festival)*, Coimbra, Portugal, July 30, 2011. (http://bridgesmathart.org/past-conferences/bridges-2011/2011-short-movie-festival/)
13. Kátai, Z., Intercultural Computer Science Education, *Proceedings of the 2014 conference on Innovation & technology in computer science education*, ACM New York, NY, USA, 2014, 183–188. (doi>10.1145/2591708.2591744)
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15. Kátai, Z., ALGO-RYTHMICS: science and art without ethnic borders, *Proceedings of the 2014 conference on Innovation & technology in computer science education*, ACM New York, NY, USA, 2014, 329–329. (doi>10.1145/2591708.2602684) (poster)
16. Kátai, Z., Algorithmic Thinking for ALL: a motivational perspective, *Proceedings of*

the 2014 conference on Innovation & technology in computer science education, ACM New York, NY, USA, 2014, 353–353. (doi>10.1145/2591708.2602669) (poster)

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1. Kátai Zoltán, How to teach programming techniques? (Hogyan tanítsuk a programozási technikákat?), *Számokt 2004, 14th International Conference In Computer Science And Education*, EMT, Cluj-Napoca, Romania, March 25-28, 2004. (in Hungarian)
2. Kátai Zoltán, Programming techniques viewed from above (Programozási technikák felülnézetből), *Számokt 2005, 15th International Conference In Computer Science And Education*, EMT, Cluj-Napoca, Romania, March 17-20, 2005. (in Hungarian)
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4. Kátai Zoltán, "Who wants to be an eminent?" - Assessment method and software („Legyél te is eminens" - értékelési módszer és eszköz), *„A tudomány napja Erdélyben" (The Day of Science in Transylvania)*, Miercurea Ciuc, Romania, November 25-26, 2006. (in Hungarian)
5. Kátai Zoltán, Máthé Szabolcs, "Who wants to be an eminent?" - Assessment method and software, *7th International Conference on Applied Informatics*, Eger, January 28-31, 2007.
6. Kátai Zoltán, Algorithms design strategies (Algoritmusok felülnézetből), *MatInfo 2007 (Conference organized by the Mathematics-Informatics Department of Sapientia University)*, Tg-Mureş, Romania, May 18, 2007. (in Hungarian)
7. Kátai Zoltán, "Automated" Dynamic programming („Automatizált" dinamikus programozás), *„A tudomány napja Erdélyben" – konferencia (Day of science in Transylvania – conference)*, Cluj Napoca, Romania, November 16, 2007. (in Hungarian)
8. Kátai Zoltán, The single-source shortest paths algorithms and the dynamic programming (Legrövidebbút algoritmusok és Dinamikus programozás), *INFODIDACT, Conference in Informatics-didactics*, Szombathely, Hungary, April 11-12, 2008. (in Hungarian)
9. Kátai Zoltán, Csiki Ágnes, "Automated" Dynamic programming, *MACS - 7th Joint Conference on Mathematics and Computer Science*, Cluj-Napoca, Romania, July 3-6, 2008.
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11. Kátai Zoltán, Tóth László, Algo-rhythmics (Algo-ritmika), *Szamokt 2008, 18th International Conference In Computer Science*, EMT, Şumulea-Ciuc, Romania, October 10-12, 2008. (in Hungarian)
12. Kovács Lehel István, Kátai Zoltán, What techniques can be used to solve the Towers of Hanoi puzzle? (Milyen programozási technikákkal oldható meg a Hanoi tornyai

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13. Kása Z., Kátai Z., Application of Shortest path algorithms in networks, *2nd International Economic Conference*, Kaposvár, Hungary, April 2-3, 2009. (in Hungarian)
14. Kátai Zoltán, Technológiailag és művészi elemekkel dúsított több-érzékszerves programozás oktatás (Technologically and artistically enhanced multi-sensory computer programming education), *MatInfo 2009 (Conference organized by the Department of the Mathematics-Informatics, Sapientia University)*, Tg-Mureş, Romania, June 8, 2009. (in Hungarian)
15. Kátai Zoltán, Algo-rhythmics: multimedia, role playing and dance in computer programming aducation („Algo-ritmika": multimédia, szerepalakítás és tánc a programozás oktatásban), *Multimedia az oktatásban 2009 (Multimedia in Education 2009),* Debrecen, Hungary, June 24-25, 2009. (in Hungarian)
16. Kátai Zoltán, „Cocktail-learning" at Sapientia University („Cocktail-learning" a marosvásárhelyi Sapientian), *Szamokt 2009, 19th International Conference In Computer Science*, EMT, Tirgu Mures, Romania, October 8-11, 2009. (in Hungarian)
17. Kátai Zoltán, Garda-Mátyás Edit, Algoritmustervezési stratégiák gráfelméleti háttere (Graph theory background of programming techniques), *„Az EME 150 éves" (The Day of Science in Transylvania),* Miercurea Ciuc, Romania, November 6-7, 2009. (in Hungarian)
18. Kátai Zoltán, Fülöp Péter István, Modeling dynamic programming problems: Petri nets versus d-graphs, *8th International Conference on Applied Informatics*, Eger, Hungary, January 27-30, 2010.
19. Kátai Zoltán, Programming education involving both sides of the brain (Két-agyféltekés programozás-oktatás a marosvásárhelyi Sapientián), *INFODIDACT, Conference in Informatic-didactics*, Szombathely, Hungary, April 22-23, 2010. (in Hungarian)
20. Kátai Zoltán, Solving Markov Decision Processes by d-graph algorithms, *The 3rd International Conference on Recent Achievements in Mechatronics, Automation, Computer Sciences and Robotics (MACRo2011)*, Tirgu Mures, Romania, April 8-9, 2011.
21. Kátai Zoltán, Intercultural programming education at Sapientia University (Interkulturális programozás-oktatás a marosvásárhelyi Sapientián), *INFODIDACT, Conference in Informatic-didactics*, Szombathely, Hungary, March 31 - April 1, 2011. (in Hungarian)
22. Kátai Zoltán, Algo-ritmika: tudomány és művészet etnikai határok nélkül (Algo-rythmics: Science and art without ethnic borders), *MatInfo 2011 (Conference organized by the Department of the Mathematics-Informatics, Sapientia University)*, Tg-Mureş, Romania, June 5, 2011. (in Hungarian)
23. Kása Zoltán, Kátai Zoltán, Scattered subwords and composition of natural numbers, *MACS - 9th Joint Conference on Mathematics and Computer Science*, Siófok, Hungary, February 9-12, 2012.
24. Bege Antal, Kátai Zoltán, Sierpinski-like triangle-patterns in Fibonomial triangles, *15th International Conference on Fibonacci Numbers and Their Applications*, Eger,

Hungary, June 25-30, 2012.

25. Vekov Géza, Györfi Ágnes, Kátai Zoltán, Differentiated programming education at Sapientia University (Differenciált programozás-oktatás a marosvásárhelyi Sapientia EMTE-n), *INFODIDACT, Conference in Informatic-didactics*, Zamárdi, Hungary, November 15-16, 2012. (in Hungarian)
26. Kátai Zoltán, Intercultural Computer Science Education, *The 2014 conference on Innovation & technology in computer science education*, Uppsala, Sweden, 23-25 July, 2014.
27. Kátai Zoltán, Selective Hiding for Improved Algorithmic Visualization, *The 2014 conference on Innovation & technology in computer science education*, Uppsala, Suedia, 23-25 July, 2014.
28. Kátai Zoltán, ALGO-RYTHMICS: science and art without ethnic borders, *The 2014 conference on Innovation & technology in computer science education*, Uppsala, Sweden, 23-25 July, 2014.
29. Kátai Zoltán, Algorithmic Thinking for ALL: a motivational perspective, *The 2014 conference on Innovation & technology in computer science education*, Uppsala, Sweden, 23-25 July, 2014.

Research grants

1. *„Graph theory background of programming techniques"*, Research Programs Institute of Sapientia University, 2007-2008 (coordinator)
2. *„Graph theory background of programming techniques"*, Research Programs Institute of Sapientia University, 2008-2009 (coordinator)
3. *„Discrete mathematics"*, Research Programs Institute of Sapientia University, 2008-2009 (member)
4. *„Discrete mathematics"*, Research Programs Institute of Sapientia University, 2009-2012 (member)
5. „*Az anyanyelvű szakképzés helyzete, problémái a tanulás (középiskolások) és tanítás (tanárok) viszonylatában*", Research Programs Institute of Sapientia University, 2013-2014 (member)

Other projects:

6. TAMOP 4.1.2-08/1/A (Social Revival Operative Programme), suported by the Govern of Hungary and European Union. (budget: 2.570.000 Ft) (member)
7. „ALGO-RYTHMICS: Science and Art without ethnic frontiers", suported by the Govern of Hungary („Szülőföld-alap" programme), 2009-2010. (budget: 2.000.000 Ft) (coordinator)

Citations

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    a. (ISI, Scopus) E..N.Wiebe, J. Minogue, M.G. Jones, J. Cowley, D. Krebs. (2009). Haptic feedback and students learning about levers: Unravelling the effect of simulated touch. *Computers & Education*, 53,

667-676. doi:10.1016/j.compedu.2009.04.004 (impact factor: 2.19)

b. (ISI, IEEE) OL Oliveira, AM Monteiro. (2013). Can natural language be utilized in the learning of programming fundamentals? In Proceedings of *43rd Frontiers in Education*, 23-26 October, Oklahoma, USA.

c. (Scopus) Chiazzese G. & Laganà M. R. (2011). Online learning with virtual puppetry, *Journal of E-Learning and Knowledge Society,* 7 (3), pp. 121-129.

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f. (EBSCO) Fariba Haghan & Kourosh Shariatpanahi. (2011). Influence of Stretching and Deep Breathing Exercises on Test Achievement Scores of Medical Students in Isfahan Medical University, Iran. *Iranian Journal of Medical Education (IJME).* 11 (1), 40-47.

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h. [(EBSCO, ERIC) Ö Korkmaz, H Altun. (2013). A validity and reliability study of the Attitude Scale of Computer Programming Learning (ASCOPL), *Mevlana International Journal of Education, 4*(1), pp. 30-43, (mije.mevlana.edu.tr) (http://dx.doi.org/10.13054/mije.13.73.4.1)

i. (ACM DL) C Marinagi, C Skourlas. (2013). Blended Learning in Personalized Assistive Learning Environments, *International Journal of Mobile and Blended Learning, 5*(2), 39-59.

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Software tools

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4. Select-sort with Gypsy folk dance.
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5. Bubble-sort with Hungarian ("Csángó") folk dance.
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6. Insert-sort with Romanian folk dance.
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