

List of Publications

Patents:

- [1] HuSSaR – Hybrid small Size HPC resource, Hungarian Intellectual Property Office, role: inventor, under review
- [2] Additional optics equipped internal flashlight illuminator to mobile devices, Hungarian Intellectual Property Office role: inventor, under review
- [3] Endoscope RGB LED light source with variable wavelength. University of Debrecen Technology Transfer Center, role: inventor, under review

Journals Papers:

- [4] Kovács, L., Kovács, R., Hajdu, A.: High Performance Computing in Medical Image Analysis HuSSaR, arXiv: 1806.06171, 2018.
- [5] B. Antal, MKGS Tavares, L. Kovács, B. Harangi, T. Pető, A. Csutak, A. Hajdu: Data Analysis Applied to Diabetic Retinopathy Screening: Performance Evaluation, *European Journal of Ophthalmology* 27:(3)124-125. 27th Meeting of the European Association for the Study of Diabetes Eye Complications Study Group (EASDec), IF: 1.897, 2017, Q2
- [6] Bálint Antal, Mayo Kayann Guerra Silva Tavaresby, László Kovács, Balázs Harangi, István Lázár, Brigitta Nagy, György Kovács, József Szakács, János Tóth, Tünde Pető, Adrienne Csutak, András Hajdu: Data analysis applied to diabetic retinopathy screening: performance evaluation, *Annales Mathematicae et Informaticae Manuscript*, elfogadás alatt, 2018, Q4
- [7] Laszlo Kovacs, Roland Kovacs, Andras Hajdu, High Performance Computing in Medical Image Analysis – HuSSaR (arXiv: 1806.06171, 2018)
- [8] A. Hajdu, L. Hajdu, A. Jonas, L. Kovacs, and H. Toman: *Generalizing the majority voting scheme to spatially constrained voting*, *IEEE Transactions on Image Processing*, Volume: PP, Issue: **99**, DOI: 10.1109/TIP.2013.2271116, 2013. IF: 3.042
- [9] A. Hajdu, L. Hajdu, L. Kovacs, H. Toman: Diversity measures for majority voting in the spatial domain, *8th International Conference on Hybrid Artificial Intelligence Systems (HAIS 2013)*, Salamanca, Spain, 2013, *Lecture Notes in Computer Science* **8073**: pp. 314-323. (2013)
- [10] R. J. Qureshi, L. Kovacs, B. Harangi, B. Nagy, T. Peto, A. Hajdu: Combining algorithms for automatic detection of optic disc and macula in fundus images, *Computer Vision and Image Understanding (CVIU)* **116**, (2012), 138–145, IF=2.404, 5IF= 2.730.
- [11] H. Toman, L. Kovacs, A. Jonas, L. Hajdu, A. Hajdu: Generalized weighted majority voting with an application to algorithms having spatial output, *7th International Conference on Hybrid Artificial Intelligence Systems (HAIS 2012)*, Salamanca, Spain, 2012, Volume Part II, *Lecture Notes in Computer Science* **7209**: pp. 56-67. (2012)
- [12] H. Toman, L. Kovacs, A. Jonas, L. Hajdu, A. Hajdu: A generalization of majority voting scheme for medical image detectors, *6th International Conference on Hybrid Artificial Intelligence Systems (HAIS)*, Wroclaw, Poland, in *Lecture Notes in Artificial Intelligence* **6679/2**: pp.189-196. (2011)

Conference Proceedings Articles:

- [13] A. Hajdu, H. Toman, L. Kovacs, L. Hajdu: Composing ensembles of object detectors under execution time constraint, *23rd International Conference on Pattern Recognition (ICPR 2016)*, International Association for Pattern Recognition (IAPR), Cancun, Mexico, 2016. pp. 217-222.
- [14] L. Kovacs, S. Petr, L. Riha: HPC GPU/CPU társrátyákkal támogatott fotorealisztikus 3D CT vizualizáció, *Eight Hungarian Conference on Computer Graphics and Geometry*, Budapest, Hungary, 2016

- [15] Kovács László, Pintér Ákos: Stirling számok vizsgálata HPC környezetben, *Tavaszi Szél Konferencia 2015, Doktoranduszok Országos Szövetsége*. (2015)
- [16] Laszlo Kovacs: 3D Visualisation from CT, Summer of High Performance Computing program (SoHPC) Medical image segmentation and visualization Project, BSC – Barcelona, IT4I National Supercomputing Center – Ostrava, PRACE (2015) (<https://summerofhpc.prace-ri.eu/final-reports-2015/>)
- [17] Janos Toth, Laszlo Kovacs, Balazs Harangi, Csaba Kiss, Andras Mohacsi, Zoltan Orosz, Andras Hajdu: An Online Benchmark System for Image Processing Algorithms, *5th IEEE International Conference on Cognitive Infocommunications (CogInfoCom 2014)*, Vietri sul Mare, Italy, 2014, *5th IEEE International Conference on COGNITIVE INFOCOMMUNICATIONS*, 2014. pp. 377-382. (2014)
- [18] L. Kovacs, B. Harangi, B. Nagy, R.J. Qureshi, A. Hajdu: Gráf alapú vakfolt és sárgafolt detektálás retina felvételeken, *8th Conference of the Hungarian Association for Image Processing and Pattern Recognition*, (KÉPAF 2011) Szegedi Egyetem, Szeged, 329-341, 2011.
- [19] Rashid Jalal Qureshi, Laszlo Kovacs, Brigitta Nagy, Balazs Harangi, Andras Hajdu: Automatic detection of the fovea and optic disk in digital retinal images by combining algorithms, *8th International Conference on Applied Informatics (ICAI)*, Eger, Hungary, January 27–30, 2010. Vol. 1. pp. 175–184. (2011)
- [20] L. Kovacs, R. J. Qureshi, B. Nagy, B. Harangi, A. Hajdu: Graph based detection of optic disc and fovea in retinal images, *4th IEEE International Workshop on Soft Computing Applications (SOFA)*, Arad, Romania, 2010, 143-148.

Posters:

- [21] Laszlo Kovacs, Strakos Petr, and Lubomir Riha: Post processing and 3D visualisation for medical images, *11th conference of the Hungarian Association for Image Processing and Pattern Recognition (KÉPAF)*, Sovata, Romania, 2017
- [22] András Hajdu, Henrietta Tomán, László Kovács, Lajos Hajdu: Composing ensembles by a stochastic approach under execution time constraint, *11th conference of the Hungarian Association for Image Processing and Pattern Recognition (KÉPAF)*, Sovata, Romania, 2017
- [23] L. Kovacs: Applications of the High Performance Computing in Medical Imaging and Visualization, *The seventh International HPC summer school on HPC Challenges in Computer Sciences (IHPCSS)*, Ljubljana, Slovenia, 2016.
- [24] Laszlo Kovacs, Lajos Hajdu: High Performance Computing With Mathematical Applications, 1st Winter School of PhD Students in Informatics and Mathematics, University of Pannonia, Veszprém, Hungary, 2013. (Best poster award, 3rd place.)

Abstracts:

- [25] L. Kovacs: Hybrid Small Size hpcResource, 7. GPU Day 2017 - *The Future Of Many-Core Computing In Science*, Budapest, Hungary, 2017.
- [26] L. Kovacs: Photorealistic 3D CT visualization supported by HPC GPU and CPU coprocessors, GPU Day 2016 – 6. *The Future Of Many-Core Computing In Science*, Budapest, Hungary, 2016.
- [27] Kovács László, Pintér Ákos: Stirling számok vizsgálata HPC környezetben, *Tavaszi Szél Konferencia 2015, Doktoranduszok Országos Szövetsége*. (2015)
- [28] Janos Toth, Laszlo Kovacs, Balazs Harangi, Csaba Kiss, Andras Mohacsi, Zoltan Orosz, Andras Hajdu: An Online Benchmark System for Image Processing Algorithms, *5th IEEE International Conference on Cognitive Infocommunications (CogInfoCom 2014)*, Vietri

- sul Mare, Italy, 2014, *5th IEEE International Conference on COGNITIVE INFOCOMMUNICATIONS*, 2014. pp. 377-382. (2014)
- [29] Laszlo Kovacs, Lajos Hajdu: High Performance Computing With Mathematical Applications, 1st Winter School of PhD Students in Informatics and Mathematics, p. 13. 1 p. University of Pannonia, Veszprém, Hungary, 2013.
- [30] L. Kovács, B. Nagy: Látógödör automatikus detektálása digitális retina képeken algoritmusok kombinálásával, XXX. Jubileumi OTDK Informatika Tudományi Szekció, Budapest, Magyarország, 2011, 87.

Technical Reports:

- [31] R. J. Qureshi, T. Peto, L. Kovács, B. Nagy, B. Harangi, A. Hajdu: Detection of the optic disc and the macula through combining algorithms, University of Debrecen, Faculty of Informatics, Preprints No. 380 (Technical Reports No. 7/2010.)

Thesis:

- [32] Kovács László: Bináris digitális képfeldolgozás, Diszkrét megközelítés (translation, original title: Binary Digital Image Processing, A Discrete Approach – Academic Press), Faculty of Informatics, University of Debrecen, (Lectors: Pákozdi Andrea, Hajdu Lajos), (2014)
- [33] Kovács László, Nagy Brigitta: Fovea lokalizálása fundus felvételeken egyesített rendszerrel, Faculty of Informatics, University of Debrecen, (supervisors: Dr. Hajdu András, Tomán Henrietta), (2010)