

Curriculum vitae: Doc. Ing. Jiří Kléma, Ph.D.

Born	September 22nd, 1971
Education	2002: Ph.D. in Artificial Intelligence and Biocybernetics at Czech Technical University (CTU), thesis: <i>Prototype Applications of Instance-Based Reasoning</i> , 1994: MSc. (Ing.) with honours in Computer Science at CTU, thesis: <i>Machine Learning as Diagnostic Tool</i> .
Professional experience	since 2014: deputy chair , Dept. of Computer Science, CTU FEE, since 2013: associate professor , Dept. of Computer Science, CTU FEE, 2005–06: post-doc on text mining in genomics, GREYC lab, Caen, France, 2002–13: assistant professor , Dept. of Cybernetics, CTU FEE, 1996–2013: research fellow , Gerstner lab, Dept. of Cybernetics, CTU FEE.
Research	Data mining and its applications in industry, medicine and bioinformatics.
Recent research activity	Learning of predictive models and descriptive patterns from large, complex and heterogeneous data , the main effort aimed at integration of measurements and existing prior knowledge. In particular, focus on modelling of gene expression and RNA-Seq data with the aid of background knowledge on gene functions, protein interactions, miRNA targets etc. The other application domains include industrial plants such as paper mills (SUPREME project) or pharmaceutical production lines (cooperation with Rockwell Automation).
Teaching (courses)	Bioinformatics, Reading Group in Machine Learning and Data Mining, Foundations of Artificial Intelligence, Applied Statistics.
Grants (PI or co-PI)	2020-24: Ministry of Health of the Czech Republic, “Role of transposable elements and PIWI-interacting RNAs in myelodysplastic syndrome (MDS) and their potential clinical applications” (NU20-03-00412), 2019-22: The Czech Science Foundation, “Circular RNAs and their relation to RNA splicing in the pathogenesis of myelodysplastic syndromes” (GA20-19162S), 2019-22: Ministry of Health of the Czech Republic, “Operational tolerance in kidney transplantation” (NV19-06-00031), 2017-20: Ministry of Health of the Czech Republic, “Long non-coding RNAs in MDS: clinical relevance and implication in the pathogenesis” (NV17-31398A), 2013-15: Ministry of Health of the Czech Republic, “XGENE.ORG – a public tool for integrated analysis of microarray, microRNA and methylation data” (NT14539),
Grants (team mem.)	2018-22: MEYS CR Center of Excellence: Research Center for Informatics (CZ.02.1.01/0.0/0.0/16_019/0000765), 2012-15: European Commission FP7: “SUPREME: Sustainable Predictive Maintenance for Manufacturing Equipment” (7E13027),
Community services	Program committees: European Conf. on Artificial Intelligence (ECAI), 2016&25, Bioinformatics (BIOSTEC), 2012-23, ACM Symp. on Applied Computing, SAC, Data Mining Track, 2007-19, Int. Symp. on Intelligent Data Analysis, IDA 2009-11&25, European Conf on Machine Learning, ECML/PKDD 2017-23. Reviewer for journals: IEEE Trans Syst Man Cybern, Control Cybern, Knowl Inf Syst, Int J Comput Math, Advances in AI, Mach Learn, Data Min Knowl Disc, J Biomed Inform, BMC Bioinf, Methods, GigaScience, Heliyon, Inf Sci, EBioMedicine. Editor: Open Computer Science journal.
Publications	more than 50 IF journal publications, 5 in reviewed international journals, 7 book chapters, more than 60 conference papers.
Citations	Times cited (WoS): 787, h-index (WoS): 18.

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- Simova, Z., Sima, M., Pelcova, D., Klusackova, P., Zdimal, V., Schwarz, J., Maskova, I., Bradna, P., Roubickova, A., Krejčík, Z., **Klema, J.**, Rossner, P., Rossnerova, A.: Transcriptome changes in humans acutely exposed to nanoparticles during grinding of dental nanocomposites. **Nanomedicine**, Vol. 19, Issue 17, 2024. IF 4.7
- Sima, M., Libalova, H., Zavodna, T., Vrbova, K., **Klema, J.**, Rossner, P.: Gene expression profiles and protein-protein interaction networks in THP-1 cells exposed to metal-based nanomaterials. **Environmental Toxicology and Pharmacology**, Vol. 108, 104469, June 2024. IF 4.3
- Saveleva, L., Sima, M., **Klema, J.**, Krejčík, Z., Vartiainen, P., Sitnikova, V., Belaya, I., Malm, T., Jalava, P. I., Rossner, P., Kanninen, K. M.: Transcriptomic Alterations in the Olfactory Bulb Induced by Exposure to Air Pollution: Identification of Potential Biomarkers and Insights into Olfactory System Function. **Environmental Toxicology and Pharmacology**, Vol. 104, 104316, November 2023. IF 4.2
- Hrubá, P., **Klema, J.**, Le, A. V., Girmanova, E., Mrazova, P., Massart, A., Maixnerova, D., Voska, L., Piredda, G. B., Biancone, L., Puga, A. R., Seyahi, N., Sever, M. S., Weekers, L., Muhfeld, A., Budde, K., Watschinger, B., Miglinas, M., Zahradka, I., Abramowicz, M., Abramowicz, D., Viklicky, O.: Novel transcriptomic signatures associated with premature kidney allograft failure. **EBioMedicine**, Vol. 96, 104782, October 2023. IF 9.7
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- Trsova, I., Hrustincova, A., Krejčík, Z., Kundrat, D., Holoubek, A., Stafflova, K., Janstova, L., Vanikova, S., Szikszai, K., **Klema, J.**, Rysavy, P., Belickova, M., Kaisrlikova, M., Vesela, J., Cermak, J., Jonasova, A., Dostal, J., Fric, J., Musil, J., Dostalova Merkerova, M.: Expression of circular RNAs in myelodysplastic neoplasms and their association with mutations in the splicing factor gene SF3B1. **Molecular Oncology**, July 6, 2023. IF 5.0
- Kaisrlikova, M., Vesela, J., Kundrat, D., Votavova, H., Dostalova Merkerova, M., Krejčík, Z., Divoky, V., Jedlicka, M., Fric, J., **Klema, J.**, Mikulenkova, D., Stastna Markova, M., Lauermannova, M., Mertova, J., Maalofouva Soukupova, J., Jonasova, A., Cermak, J., Belickova, M.: RUNX1 mutations contribute to the progression of MDS due to disruption of antitumor cellular defense: A study on patients with lower-risk MDS. **Leukemia**, 1-9, 2022. IF 12.8
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- Dostalova Merkerova, M., **Klema, J.**, Kundrat, D., Szikszai, K., Krejčík, Z., Hrustincova, A., Trsova, I., Le, A., V., Cermak, J., Jonasova, A., Belickova, M.: Noncoding RNAs and their response predictive value in azacitidine-treated patients with myelodysplastic syndromes and acute myeloid leukemia with myelodysplasia-related changes. **Cancer Genomics and Proteomics**, 19(2), pp. 205-228, 2022. IF 2.6
- Sima, M., Cervena, T., Elzeinova, F., Ambroz, A., Beranek, V., Vojtisek-Lom, M., **Klema, J.**, Ciganek, M., Rossner, P.: The impact of extractable organic matter from gasoline and alternative fuel emissions on bronchial cell models (BEAS-2B, MucilAir). **Toxicology in Vitro**, Vol. 80, 105316, April 2022. IF 2.6