

Candidate supervisor's information summary form

maximum 2 pages – it should be a summary of most important achievements

Name and surname, degree, title: Ryszard Kozera , D.Sc., Prof. SGGW (Warsaw Uni. Life Sciences - SGGW)	
Discipline/ disciplines of science	Information and communication technology
Professional development (degrees and titles) in chronological order	<p>M.Sc.: maths (Warsaw Uni.), 1985.</p> <p>PhD: comp. sc. (Flinders Uni. South Australia), 1991.</p> <p>Dr.: maths (Warsaw Uni.), 1992 – recognition of b).</p> <p>D.Sc.: technical sc., comp. sc. (Silesian Uni. Tech.), 2006.</p>
Most important publications/patens over the last 3 years (maximum 10)	<ol style="list-style-type: none"> 1. "Automated identification of soil fungi and chromista through convolutional neural networks", K. Struniawski, R. Kozera, P. Trzciński et al., Eng. Appl. Art. Intell., 127B, 1-12, 2024. 2. "Identification of selected soil bacteria genera based on their geometric and dispersion features", A. Konopka, R. Kozera, L. Sas-Paszt et al., PLoS ONE, 18(10), 1-11, 2023. 3. "Optimal knots selection in fitting degenerate reduced data", R. Kozera, L. Noakes, LNCS 10475, Int. Conf. Comput. Sc. (ICCS'23, Prague), 439-453, 2023. 4. "Non-generic case of Leap-Frog Algorithm for optimal knots selections in fitting reduced data", R. Kozera, L. Noakes, LNCS 1335, Int. Conf. Comput. Sc. (ICCS'22, London), 341-354, 2022. 5. "Classification of soil bacteria based on machine learning and image processing", A. Konopka, K. Struniawski, R. Kozera et al., LNCS 13352, Int. Conf. Comput. Sc. (ICCS'22, London), 263-277, 2022. 6. "Generic case of Leap-Frog Algorithm for optimal knots selections in fitting reduced data", R. Kozera, L. Noakes & A. Wiliński, LNCS 12745, Int. Conf. Comput. Sc. (ICCS'21, Kraków), 337-350, 2021. 7. "Exponential parameterization to fit reduced data", R. Kozera, L. Noakes & M. Wilkołazka, Appl. Maths Comput. 391(C), 125646, 2021. 8. "Parameterizations and Lagrange cubics for fitting multidimensional data", R. Kozera, L. Noakes & M. Wilkołazka, LNCS 12138, Int. Conf. Comput. Sc. (ICCS'20, Amsterdam, 2020), 124-140, 2020. 9. "A note on modified Hermite interpolation", R. Kozera, M. Wilkołazka, Maths Comput. Sci. 14, 223-235, 2020. 10. "Efficient numerical algorithms for constructing orthogonal generalized doubly stochastic matrices", A. Smoktunowicz, R. Kozera, G. Oderda, Appl. Numer. Anal. 142, 16-27, 2019. 11. "Integrated multi-channel optical system for bacteria characterization and its potential use for monitoring of environmental bacteria", I. Buzalewicz, A. Suchwałko, P. Trzciński, L. Sas-Paszt, B. Sumorok, K. Kowal, R. Kozera, A. Wieliczko & H. Podbielska. Biomedical Optics Express 10(3), 1165-1183, 2019. 12. "Convergence order in trajectory estimation by piecewise cubics and exponential parameterization", R. Kozera, M. Wilkołazka, Math. Model. Anal. 24 (1), 72-94, 2019.

	Ponad 140 publications (journal & conference proceedings' papers or monographs' chapters) including 2 each over 100 page papers.
Experience in work with doctoral students (defended doctoral dissertations, doctoral programmes opened) in chronological order	<p>1. Dr S. Collings (maths & comp. science), The Uni. Western Australia, Perth, Australia (conferred in 2007) - "<i>Frontier Points Theorems and Methods for Computer Vision</i>" - 5 publications referring to Ph.D. topic.</p> <p>2. Dr M. Dolecki (computer science), Silesian Uni. Tech., Poland (conferred in 2014) - "<i>Classification of Synchronization Time for Tree Parity Machine Used for Reconciliation of Cryptographic Keys</i>" - 6 publications referring to Ph.D. topic.</p> <p>3. Mgr M. Wilkołazka (computer science), Silesian Uni. Tech. (open doctoral dissertation in 2018) – 11 publications referring to Ph.D. topic.</p> <p>Reviewer: 6 Ph.D. theses (Australia, New Zealand, Poland, Singapore, United Arab Emirates) and 1 D.Sc. thesis and 1 D.Sc. monograph referee (both in Poland).</p>
Project/grants achievements (from the last 10 years)	<p>a) Participation in project with Horticulture Institute, Skierniewice, Poland - National Center of Research and Development (IS2/41/NCBR/2015), 2015-2017.</p> <p>b) Visiting Research Fellowship, School of Mathematics and Statistics, Uni. of Western Australia, Perth, Australia, 2015-2016.</p> <p>c) Participation in project: New technologies of the high resolution face animation and acquisition, Polish-Japanese of Academy of Information Technology, Bytom, - National Center of Research & Development, 2015.</p> <p>d) Participation in EU project: Elaboration of Innovative Products for Ecological Cultivation of Horticultural Plants, EkoTechProdukt UDAPOIG.01.03.01-00-109/08, Intelligent Methods for Recognition of Microorganism in the Soil Environment, with Horticulture Institute, Skierniewice, Poland, 2013-2015.</p> <p>Previous projects: 5 in Germany and 2 in Australia.</p>
Topic – research problem – for which the candidate supervisor seeks a doctoral student	Computer vision, image analysis, artificial intelligence, numerical methods, optimization, data modelling, interpolation, applied mathematics in computer science and engineering (e.g. biomedicine, trajectory and surface modelling, 3D reconstruction, noise filtering or neural networks).
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