Ing. Marek Bednář, PhD.
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Education, Professional Training, and Courses

Brno University of Technology, Faculty of Electrical Engineering
Computer Science and Computing Technology, 9/1990-9/1995
Master's Thesis: UI System for Natural Language Understanding (English)

Stanford University
Certificate of Completion for Specialized Artificial Intelligence Course

Czech University of Life Sciences Prague, Faculty of Environmental Sciences
Landscape Engineering, Environmental Modeling, 2013-2018
Dissertation: Analysis of Patterns of Degradation-Prone Areas in the Czech Republic and Modeling of Protective Measures Using GIS Tools

Work Experience - Main Activities

UP Olomouc
assistent professor

Scientific work focused on environmental modeling, methodology and algorithm design, GIS applications in hydrology, pedology, biodiversity, and spatial species distribution. Data analysis, programming, and software design. Teaching IT, data processing, and GIS-related subjects.

Current Projects within Research Activities (2023)

HORIZON 2020 European project – BESTMAP (Behavioral, ecological and socio-economic tools for modelling agricultural policy), Crop Rotation as an Adaptive Measure for Optimizing Landscape Water Management, Introduction of New Methodological Approaches in Landscape Erosion Protection, Center for Biodiversity and Landscape.

Most Significant Publications:

Bednar M, Sarapatka B, Netopil P, Zeidler M, Hanousek T, Homolova L. 2023. The Use of Spectral Indices to Recognize Waterlogged Agricultural Land in South Moravia, Czech Republic. Agriculture-Basel 13(2).

Sarapatka B, Bednar M. **2022.** Rainfall Erosivity Impact on Sustainable Management of Agricultural Land in Changing Climate Conditions. Land 11(4), Art. No. 467.

Sarapatka B, Bednar M. 2021. Agricultural Production on Erosion-Affected Land from the Perspective of Remote Sensing. Agronomy-Basel 11 (11).

Bednář M., Šarapatka B., Mazalová, M., Kuras, T. : Connectivity modelling with automatic determination of landscape resistance values. A new approach tested on butterflies and burnet moths. Ecological Indicators. 2020
Bednář M., Šarapatka B. Relationships between physical-geographical factors and soil degradation on agricultural land. Environmental Research. 2018.
Bednář M., Šarapatka B. The Use of Multi-criteria Analysis for Identifying Areas Sensitive to Land Degradation and Water Retention. Ekologia Bratislava. 2018.

Šarapatka B., Bednář M. Assessment of Potential Soil Degradation on Agricultural Land in the Czech Republic. Journal of Environmental Quality. 2015.

Language Skills: English (Passive – Excellent, Active – Very Good, Daily Work with Texts in English, Occasional Technical Translations), Russian, and Basic German.

Interests: Diverse, ranging from technical (physics, mathematics, computer science, UI) to humanities (languages, psychology, philosophy, history, art) and sports (tennis, tai chi, general fitness).