

Towards automation of pollen grain detection with AI

Department: Physical Geography

Research group: Palaeoecology & Computational geography

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Project description

Rapid development of object detection algorithms have led to a wealth of new possibilities that are relevant to the analysis of (micro)fossils. A number of new AI-based tools have been developed that we want to test and improve for their use in automation of microfossil identification from sediment cores. Potentially the implementation of these tools can revolutionize this field as the analysis is no longer limited by research time of an experienced analyst behind the microscope. We want to test several new tools and workflows with a real 'fossil' case study and improve the calibration of taxa in this application with the use of our extensive reference collection and innovative set up for scanning of microscopic slides. You will scan microscopic slides, apply the existing tools and compare them with annotated results and propose and work on improvements of the approaches. You will gain experience with the implementation and application of these innovative imaging techniques and help to bring the palaeoecology field to another level.

Job requirements

Experience with (or willingness to learn) Python, affinity with microfossil analysis (e.g. pollen, diatoms) and microscopy and, above all, an explorative and inquisitive mindset.