Přírodovědecká Jihočeská univerzita
fakulta v Českých Budějovicích
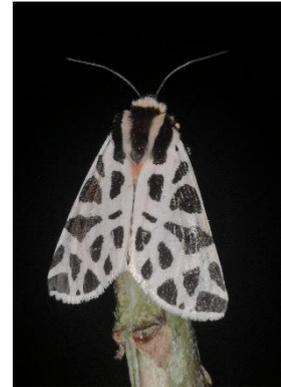Faculty University of South Bohemia
of Science in České Budějovice

PhD Position in Machine Learning and Ecology

Night pollinators – an overlooked component of pollination networks

The Faculty of Science at the University of South Bohemia is launching a transformative **4-year research project** dedicated to nocturnal pollinators. Despite their fundamental ecological significance, nocturnal pollinators remain disproportionately understudied, leaving a critical knowledge gap in our understanding of complex pollination networks.

This project aims to **bridge this global knowledge gap** by developing and implementing state-of-the-art **AI-powered models** for the automated taxonomic identification of insects captured via high-resolution camera traps. You will build upon the prestigious **SEPPI Biodiversa (**Standardized European monitoring of plant-pollinator interactions; https://seppi-pollinate.weebly.com) initiative, extending its proven hardware and software frameworks into the challenging and complex nocturnal environment.

Key research Objectives:

- **AI Innovation (Taxonomic Identification):** Developing and optimizing deep-learning architectures for the automated detection and classification of nocturnal insect species.
- **Ecological Network Analysis:** Mapping the vital contribution of nocturnal species to pollination networks across both natural and restored meadows in the **White Carpathian Mountains** (a European biodiversity hotspot - for more information look at https://ser-insr.org/news/2017/12/29/grassland-restoration-in-the-white-carpathian-mountains).
- **Effectiveness Assessment:** Quantifying real-world impact through manipulative field experiments to measure pollen transfer and plant reproductive success.
- **Botanical Synergy & Conservation:** Identifying key Czech flora that support the full life cycles of nocturnal pollinators to establish a **comprehensive conservation database**.

Candidate Responsibilities

- design and optimization of AI detection and classification workflows for large-scale image data
- active participation in field research, including data collection and experimental monitoring of plant-pollinator interactions
- publication of at least three high-impact scientific papers as the core of the doctoral thesis

- present and disseminate research results at international events and seminars
- be an active member of the working group

What we offer

- **duration:** 4 years (standard PhD programme duration)
- **anticipated** start: **April/May 2026** and will last for four years, which is a standard period of a doctoral programme at FSci USB (https://www.prf.jcu.cz/en/study-at-the-faculty/information-for-phd-students).
- **salary:** salary on the basis of local standards, including health insurance and social advantages. Monthly net income of **30,000 CZK** (combined salary and state scholarship), totaling approx. 360,000 CZK (~14,730 EUR) annually
- **location:** České Budějovice, a vibrant university city with a strong community of international scientists and low living costs by European standards

Required skills of PhD candidate

- **MSc degree** in a relevant field (Informatics, Computer Science, Ecology, or Biology).
- strong **Python** programming skills
- proven experience with **Machine Learning** and image processing (**Deep Learning/Object Detection**)
- strong analytical and problem-solving skills, with the ability to work both independently and in an interdisciplinary team
- fluency in English, both written and spoken with excellent communication skills
- technical and field assets: experience with **camera traps/sensor networks, interest in biodiversity**, and a valid EU driving license

How to apply

The call for applications remains open until the position is filled.

Priority will be given to applications received by April 25, 2026. Following a pre-selection process, shortlisted candidates will be invited for an online interview.

Requirements for Application: Please submit the following documents in a **single PDF file** to the principal investigator, **Assoc. Prof. Jana Jersakova (jersa@prf.jcu.cz)**:

1. **Cover Letter** specifying your motivation and relevant technical expertise.

2. **Curriculum Vitae** including a list of publications (maximum 3 pages).