



Fellow	<Ali / Saudi>
Host Organisation	<Fraunhofer IDMT>
Scientific coordinator	<Hanna / Lukashevich>



I – SCIENTIFIC ACTIVITY DURING YOUR FELLOWSHIP

- Contributed to projects at the intersection of artificial intelligence and ecological monitoring, with a particular emphasis on biodiversity.
- In the BioMonitor4CAP project, conducted a literature survey on bird sound classification and contributed to the development of feature extraction methodologies and deep learning models for insect sound classification.
- Designed convolutional neural network (CNN) architectures integrating late fusion strategies to enhance performance in acoustic classification tasks.
- The outcomes of this work led to two journal papers, where I am the first author. Both papers were submitted to high-impact journals, received "Revisions Required" decisions, and are currently being revised for resubmission.
- Participated in the Aphid Research Project by developing algorithms for processing time-series data and extracting statistical features to support ecological data analysis.
- Collaborated with interdisciplinary teams, bringing together expertise from ecology, entomology, and artificial intelligence.

II – PUBLICATION(S) DURING YOUR FELLOWSHIP

1. "Improved Insect Sound Classification using Modulation Spectrograms and Late Integration", submitted to Insect Conservation and Diversity Wiley Journal. [Revisions Required and Resubmit]
2. "Identifying Birds through Sound: Challenges and Advances in Machine Learning based Methods", International Journal of Avian Science (Ibis), Wiley Journal. [Revisions Required and Resubmit]

III – ATTENDED SEMINARS, WORKHOPS, CONFERENCES

No

IV – RESEARCH EXCHANGE PROGRAMME (REP)

No

