

# CHIRAG PADUBIDRI

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📍 Pentageias 3, Nicosia 1048, Cyprus

## SUMMARY

I am a dedicated Researcher with a Master’s in Embedded Systems, focusing on Deep Learning, Machine Learning, and Computer Vision. My current research is centered around leveraging Remote Sensing, Deep Learning, and Pervasive Computing to develop innovative solutions for Biodiversity Monitoring and promote sustainability. I thrive in collaborative environments and consistently deliver high-quality results.

## COLLEGE

### Doctoral Training Program (Pursing)

**Cyprus University of Technologies**  
📅 January 2022 - Present    📍 CYENS Centre of Excellence, Cyprus  
My doctoral research involves harnessing the capabilities of Species Distribution Models (SDM) to construct a species digital twin and development of the algorithms for optimizing camera-trap placement to maximize species diversity coverage using SDM.

### MSc. in Embedded System

**University of Twente**  
📅 2018 – 2020    📍 Twente, Netherlands  
Master of Science in Embedded System focusing on Machine Learning, Computer Vision and Embedded System.

### BE in Electrical and Electronics Engineering

**Visvesvaraya Technological University**  
📅 2010 – 2014    📍 Belgaum, India  
Bachelor’s degree in Electrical and Electronics Engineering with a CGPA of 8.87 from NMAM Institute of Technology, Nitte, India.

## EXPERIENCE

### Chief Operating Officer (COO)

**PERIOPSIS LTD**  
📅 Sep 2022-Present    📍 Cyprus  
PERIOPSIS LTD(<https://www.periopsis.com/>) is an innovative company providing satellite imagery and aerial photography-based analytic services employing state-of-art Artificial Intelligence and Computer Vision techniques. PERIOPSIS is a spin-off company of the CYENS – Center of Excellence

### Research Associate

**SuPerWorld MRG**  
📅 September 2020 - Present    📍 CYENS Centre of Excellence, Cyprus  
Role:  
-To conduct fundamental and/or applied research as part of the company’s research focus in interactive media under the respective Multidisciplinary Research Group (MRG)  
-To participate in the preparation of project report and deliverables, research proposals for funding, and software development.  
-To have a role in dissemination activities, including presenting and publishing research results in prestigious international conferences and journals.

## RESEARCH INTEREST

- Biodiversity monitoring
- Pervasive computing
- Deep learning
- Species Distribution Model
- Remote-sensing
- Cameratrap
- Passive Acoustic Monitoring

## TECHNICAL SKILLS

- Computer Vision
- Deep Learning
- Machine Learning
- Embedded System
- Internet-of-Things
- Image Processing
- Machine-Vision
- GIS

## ADDITIONAL SKILLS

- PyTorch
- Keras
- Tensorflow
- OpenCV
- Pandas
- GeoPandas
- Satellite imagery
- Multi-spectral
- QGIS
- ArcGIS

## PROGRAMMING SKILLS

- Python
- C++
- QGIS
- ArcGIS
- Latex & Markdown
- Version Control
- Blender

## SOFTSKILLS

- Team Work
- Self-Motivated
- Independent
- Hard-Working
- Responsibility

## CURRENT PROJECT

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### MED4PEST - MEDiterranean alliance for ecological PEST management

*CYENS Centre of Excellence*

MED4PEST (<https://med4pest.org/>) aims to develop proven, effective Ecologically Based Rodent Management (EBRM) methods and products, which are readily integrated into local pest/invasive rodent management systems in Mediterranean countries, contributing to the shift from synthetic pest control to biological and ecological pest management, ultimately leading to eco-sustainable farming systems, higher quality and quantity crop production and optimization of input use for ecosystem health. MED4PEST objectives and goals will produce new knowledge through scientific research that will be pursued with the collaborative research of the consortium partners from 2 Universities, 2 Research Institutes, and one company. MED4PEST is funded by Prima Foundation (Partnership for Research and Innovation in the Mediterranean Area), it is coordinated by MetaMeta Anatolia.

### BEHIVE - Monitoring and Observing BEes in real-time by means of Smart BeeHIVEs

*CYENS Centre of Excellence*

The objective of BE-HIVE <https://superworld.cyens.org.cy/project16.html> is to develop a complete end-to-end smart beehive monitoring system. It will employ state-of-the-art sensing technologies (noise, temperature, humidity, optical and thermal cameras, camera traps), together with state-of-the-art computer vision technologies (deep learning, DL) and remote sensing (aerial photography from drones) to create smart beehives, monitoring bees' behavior and population numbers in real-time, examining in real-time potential threats to their colonies (anomaly detection). This allows to understand their well-being, react fast in dangers, especially in relation to climate change, making the life of beekeepers easier. Remote sensing allows to map the nearby environment (e.g. up to a distance of 5 kilometers) in terms of plants/flowers while DL allows to monitor the movement of bees inside and in/out of the bee hive, observing which type of pollen (and correspondingly, flowers) they carry/visit. Finally, camera traps will be strategically placed near significant sources of nearby flowers, to understand where and when bees travel to locate food, as well as whether this creates conflicts with nearby (wild-)bees located in the larger area under study.

## COMPLETED PROJECTS

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### Broccoli Classification Challenge - VanBoven

*Netherlands*

This project was a online competition conducted by VanBoven (agriculture) to classify and segment the broccoli from drone images

### Performance Evaluation of Kannada Numerical Digit Classification

*University of Twente*

This project was a part of course Advance Machine Learning. The problem statement was taken from Kaggle competition-Kannada numerical digit classification. The performance of various Machine learning algorithm like KNN, SVM, PCA, CNN on Kannada Numerical digit dataset evaluated and analysed

### Object Tracker - Vision Loop System

*University of Twente*

This project was a part of course Embedded system laboratory. Here a vision loop system was developed on a camera setup with tilt and pan motion. In final implementation the camera followed the object in real time. Real-time software and FPGA based IP was used for control.

### Real Time Software development for Controlling JIWWY setup

*University of Twente*

This project was the part of course Real-Time Software Development. The objective of this project was to develop a Real Time Software to control the motion of the JIWWY setup by a Joystick. The entire real time software was developed in C++ using TERRA and LUNA. The controller part was done using 20-Sim

### Voice Controlled Smart Home System

*NMAM Institute of Technology*

The objective of the project was to develop a smart home where people can control the house hold appliance using voice command.

### Tesla Coil

*NMAM Institute of Technology*

As a part of hobby project in bachelor's degree, we had designed and demonstrated Tesla coil, an electrical resonant transformer circuit.

# PUBLICATIONS

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Andreas Kamilaris, Jesper Provoost, Jean-Baptiste Filippi, Chirag Padubidri, Savvas Karatsiolis, Ian Cole, Wouter Couwenbergh, and Evi Demetriou. "EscapeWildFire: Assisting People to Escape Wildfires in Real-Time." 2021 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops), 2021.

Chirag Padubidri, Andreas Kamilaris, Savvas Karatsiolis, and Jacob Kamminga. "Counting Sea Lions and Elephants from Aerial Photography Using Deep Learning with Density Maps." *Animal Biotelemetry* 9, no. 1 (2021).

Chirag Padubidri, Andreas Kamilaris, and Savvas Karatsiolis. "Accurate Detection of Illegal Dumping Sites Using High Resolution Aerial Photography and Deep Learning." 2022 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops), 2022.

Savvas Karatsiolis, Chirag Padubidri, and Andreas Kamilaris. "Exploiting Digital Surface Models for Inferring Super-Resolution for Remotely Sensed Images." *IEEE Transactions on Geoscience and Remote Sensing* 60 (2022): 1–13.

Andreas Kamilaris, J.B Filippi, Chirag Padubidri, R Koole, and Savvas Karatsiolis. "Examining the Potential of Mobile Applications to Assist People to Escape Wildfires in Real-Time." *Fire Safety Journal* 136 (2023): 103747.

Asfa Jamil, Chirag Padubidri, Savvas Karatsiolis, Indrajit Kalita, Aytac Guley, Andreas Kamilaris. "GAEA-A Country-Scale Geospatial Environmental Modelling Tool: Towards a Digital Twin for Real Estate", yet to publish

Savvas Karatsiolis, Chirag Padubidri, Andreas Kamilaris. "Scalable Retrieval of Similar Landscapes in Optical Satellite Imagery Using Unsupervised Representation Learning", yet to publish