



MASTER'S THESIS PROJECT AT PANDIONAI

CHANGE DETECTION FOR AI ANALYSIS IN REMOTE SENSING IMAGERY

Are you passionate about staying on the cutting edge of Computer Vision, Artificial Intelligence, and Earth Observation from space? Join us at PandionAI for your Master's Thesis and embark on the development of our satellite constellation AlertSat.

Project Overview

The Earth is under constant change and for Remote Sensing and Earth Observation applications, capturing when and how certain changes occur is crucial and could have life-saving implications. In this project, the student will research, develop, and evaluate state-of-the-art methodologies for detecting and analyzing changes in regions and objects captured by satellite imagery. The objective of these methods is to distinguish between changed and unchanged areas. This will be done by exploring both distributional change analysis through spatio-temporal statistical techniques and also deep learning techniques such as object-level mask-based classification and segmentation.

See this paper for project reference: <https://arxiv.org/abs/2404.12081>

Job Type: Master Thesis / Internship

Location: Kista (Stockholm), with a hybrid remote work option

Scope of Project

- Research and evaluate current state-of-the-art methodologies for analyzing and detecting change in Remote Sensing imagery
- Develop new methodologies to measure and detect changes
- Implement and evaluate the above methodologies using various performance metrics
- Demonstrate how these methodologies can be used for various applications

About PandionAI

PandionAI, established in 2019, is an innovative start-up company in the space industry, specializing in Earth Observation, with a strong focus on downstream applications and AI/IT development. We are seeking passionate individuals to join us on our journey to put the AlertSat satellite constellation in space and to contribute to shaping the development of AlertSat's services in close collaboration with our dynamic team.

At PandionAI, our mission is to secure time-critical intelligence through AI-based analysis from our AlertSat satellite constellation. We are currently working on a system that utilizes image recognition for event detection directly on board the satellites, enabling real-time information delivery. Our ultimate goal is to bridge the gap between satellite data collection and end users, resulting in enhanced safety, transparent information dissemination, and rapid response to events happening on Earth's surface. We empower our users with the ability to make informed decisions in the face of rapid changes and critical events.

Interested? Send your CV, some description of why your interest in this project is of extra-large interest, and also some initial ideas for approaching this problem to PandionAI to career@pandionai.com ASAP or before the 10th of November.

We primarily look for students studying applied mathematics, physics, or Machine Learning, but any similar background is of interest!