Master Thesis Project - IT Data and Customer Solutions

หน้าที่ความรับผิดชอบในงานของคุณ

This thesis proposes a comparative study of advanced object detection (OD) architectures applied to the task of anomaly detection. Moving beyond widely adopted models such as Mask R-CNN and YOLO, the research will explore alternative state-of-the-art approaches, including D-FINE and other top-performing models featured on the literature. The study will involve implementing these models and evaluating their performance on a dataset specifically designed for detecting anomalies in real world scenarios. Key evaluation metrics will include mean Average Precision (mAP) and Intersection over Union (IoU), with a particular focus on the impact of IoU-based loss functions for object detection.

The goal is to assess the performance of object detection architectures in identifying and localizing anomalies in tire images, providing insights into their suitability for real-world industrial applications.

Study how do different state-of-the-art object detection architectures compare in terms of classification, accuracy, efficiency, and robustness when applied to real world anomaly detection, and what is the impact of IoU-based loss functions on their performance.

โปรไฟล์ของคุณ

- Training Area in Computer Science, Artificial Intelligence, Data Science or similar;
- Good understanding of computer vision and deep learning concepts;
- Knowledge of machine learning algorithms and evaluation metrics;
- Familiarity with object detection architectures (e.g., YOLO, Mask R-CNN, D-FINE);
- Proficiency in Python and deep learning frameworks (e.g., PyTorch, TensorFlow);
- Experience with dataset preparation, annotation tools, and data augmentation;
- Ability to implement and fine-tune deep learning models;
- Skills in performance evaluation and result analysis using metrics like mAP and IoU;
- Familiarity with version control tools (e.g., Git) and experiment tracking.

ข้อเสนอของเรา

Our offer:

- Integration in a challenging and international work environment;
- Collaborative working style;

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ที่ตั้ง

Lousado

นิติบุคคล

Continental Solution Center Portugal, Unipessoal, LDA.

- Learning opportunities for professional development.

We are committed to fostering a workplace where everyone feels safe, respected, and valued. All kind of applications are welcome.

Please note:

- Mandatory to be studying in a Portuguese University, ready to start Master Thesis Project.
- To initiate on the 2nd Semester of 2025-2026.

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เกี่ยวกับเรา

Continental is a leading tire manufacturer and industry specialist. Founded in 1871, the company generated sales of €39.7 billion in 2024 and currently employs around 95,000 people in 54 countries and markets.

Tire solutions from the Tires group sector make mobility safer, smarter, and more sustainable. Its premium portfolio encompasses car, truck, bus, two-wheel, and specialty tires as well as smart solutions and services for fleets and tire retailers. Continental has been delivering top performance for more than 150 years and is one of the world’s largest tire manufacturers. In fiscal 2024, the Tires group sector generated sales of 13.9 billion euros. Continental's tire division employs more than 57,000 people worldwide and has 20 production and 16 development sites.