The availability of thermal cameras opens new chances for better person privacy for person monitoring systems. However, in real-life outdoor applications, the performance of deep learning model tends to drop significantly due to conditions changing over time.

**Tasks**
- Provide an overview of the literature in the field.
- Compare state-of-the-art approaches regarding their methodology.

**Literature**

**Supervisor**
Mickael Cormier, M.Sc. mickael.cormier@iosb.fraunhofer.de
Person Retrieval in Surveillance Using Natural Language Queries

Natural language-based person retrieval is an important topic in surveillance applications as it enables searching for criminals based on textual person descriptions obtained from witness testimonies. The approaches aim to retrieve all occurrences of individuals matching a given person description from a gallery database.

**Tasks**
- Provide an overview of the literature in the field
- Compare state-of-the-art approaches regarding their methodology

**Literature**

**Supervisor**
Andreas Specker, M.Sc. andreas.specker@iosb.fraunhofer.de
Fine-grained object recognition describes the task of determining the class of an object on a very specific level, e.g. the species of a bird. While most approaches apply an end-to-end learning strategy or basic 2D attention mechanisms, incorporating the 3D structure in the classification process is a promising prospect for improving the recognition accuracy.

**Tasks**
- Acquire an overview of the literature in the field.
- Compare state-of-the-art approaches regarding their methodology.

**Literature**
- Joung et al., Learning Canonical 3D Object Representation for Fine-Grained Recognition, ICCV 2021

**Supervisor**
Stefan Wolf (stefan.wolf@iosb.fraunhofer.de)
Neural Temporal Point Processes

Temporal point processes (TPP) are probabilistic generative models for continuous-time event sequences. Neural TPPs combine the fundamental ideas from point process literature with deep learning approaches, thus enabling construction of flexible and efficient models [1].

Aufgaben
- Literature research on neural temporal point processes.
- How do they differ from the classic TPPs? What are the advantages?

Literatur

Betreuer
Zeyun Zhong(zeyun.zhong@kit.edu)
Transient Imaging


Aufgabe

- Literaturrecherche zum Thema.
- Aufbereitung der Ergebnisse in Form eines wissenschaftlichen Berichts und einer Präsentation.

Beispielliteratur


Betreuer

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