PhaKIR Challenge - Phase, Keypoint and Instrument Recognition

Methodology Report

Part of the Endoscopic Vision (EndoVis) Challenge at MICCAI 2024

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Introduction

A challenge paper will be published after the MICCAI conference, in which the approaches and results of the individual participants will be presented. For this, we need as much detailed information as possible about the individual methods. The following list should serve as a guideline to collect the most relevant information systematically. The list below does not claim to be exhaustive, and you are welcome to add further information to it. If you participate in more than one task and use individual models for each task, please provide a separate methodology report for each model.

We also encourage you to publish your code as open source. If you can provide us with a URL to your GitHub repository by October 1, we will include it in the final challenge paper. Please send your methodology report, together with your user or team name, which you have specified at your docker submission, by e-mail to phakir2024@re-mic.de by September 15th, 2024 at the latest.

Please note: A submitted method without a corresponding methodology report will not be considered for the ranking and thus for the awarding of the prize money.

If you have any questions, please feel free to contact us at any time either via the forum (`https://phakir.re-mic.de/community/phakir-forum/`) or by e-mail.

1 Hardware

Specify the hardware you used for the training of your models, e. g., GPU, CPU, RAM, number of GPUs trained in parallel, ...

2 Pre-Training

Specify the method and datasets you are using to pre-train your models. If you are using pre-trained weights, please indicate this as well.

3 Hyperparameter

Specify the used hyperparameters of your submitted model and what was your strategy to discover these. At minimum please specify the following:

- Learning rate(s)
- Weight decay(s)
- Optimizer
- Scheduler
- Batch-size
- Epochs / iterations
- ...

If your approach contains additional method-specific parameters, please specify them as well.

4 Training Protocol

1. Specify the applied partitioning of the provided training data (fixed splits, cross-validation, ...) for the development of your model.
2. Describe the data augmentation techniques you applied, including the specific parameters. Also, indicate the image sizes used during training and validation. If you employed a special strategy to discover or optimize your augmentations, kindly provide details about that process as well.
3. Describe the architecture of your model in detail.
4. Describe the training procedure of your model in detail including your used loss function with all relevant parameters (supervised, semi-supervised, consistency learning, ...).
5. Describe if and how you used temporal information in your method.