dfkinit2b at CheckThat! 2025: Leveraging LLMs and Ensemble of Methods for Multilingual Claim Normalization

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Ivan Vykopal

CLEF CheckThat! 2025, 11.09.2025

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Kempelen Institute of Intelligent Technologies

Motivation

- Misinformation is spreading rapidly on social media

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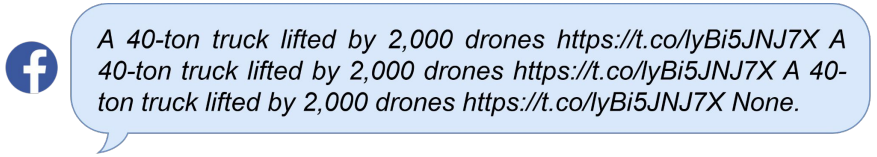

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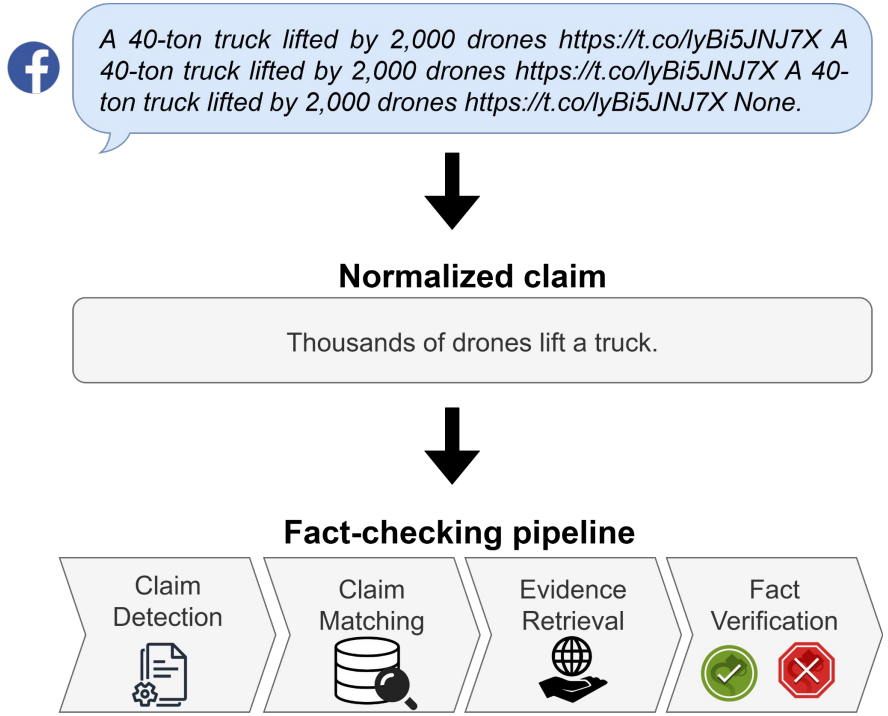

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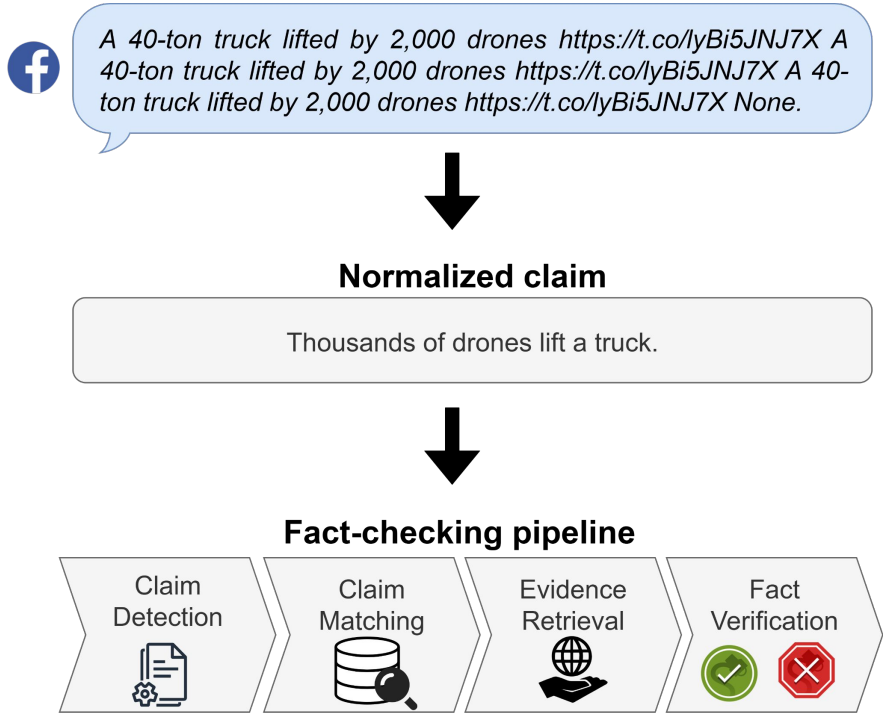
- Need for ***Claim Normalization*** to support automated fact-checking
- Multilingual dimension adds complexity



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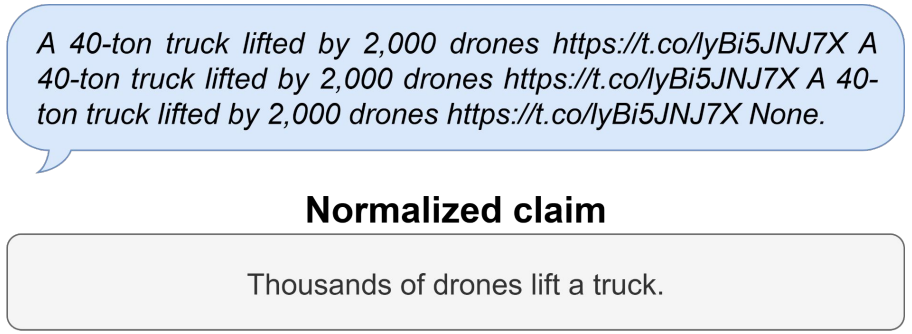

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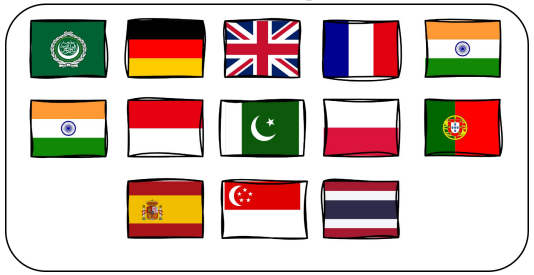

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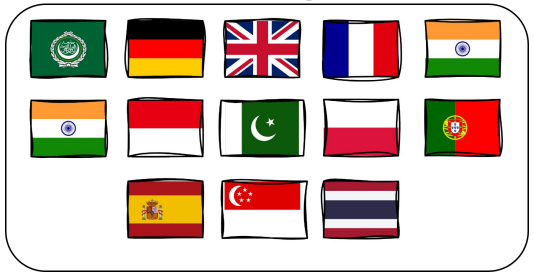
- Monolingual: 13 languages with full datasets (train, dev, test)
- Zero-shot: 7 unseen languages, test set only

Monolingual



Zero-shot

Data & Pre-Processing

- Data are sourced from Google Fact-Check Explorer via ClaimReview

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Challenges

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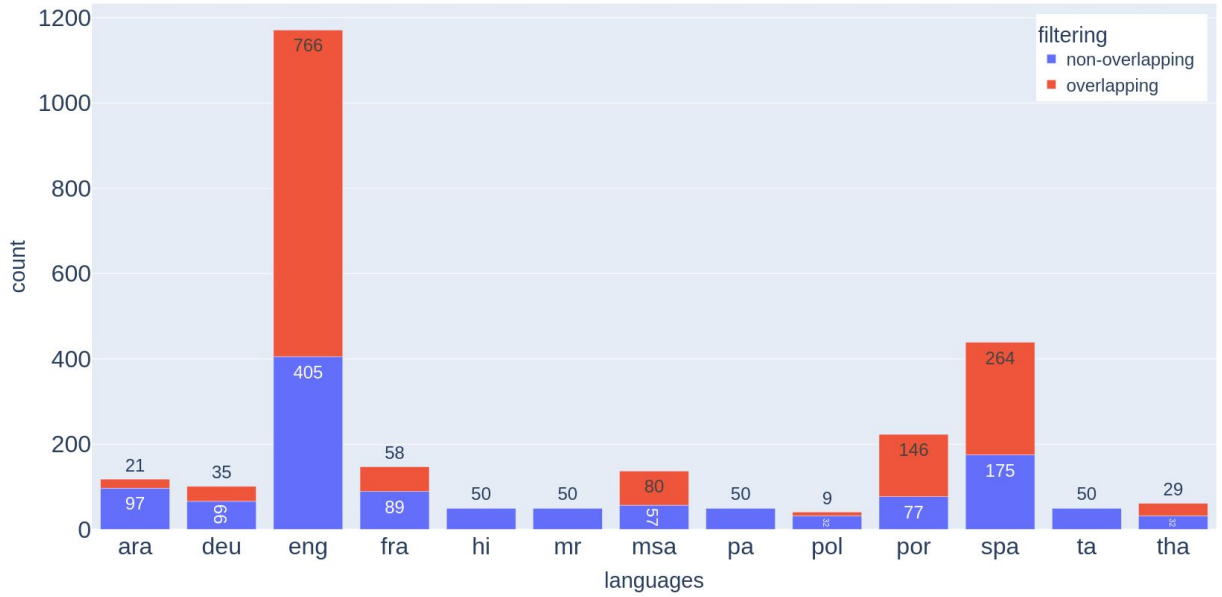

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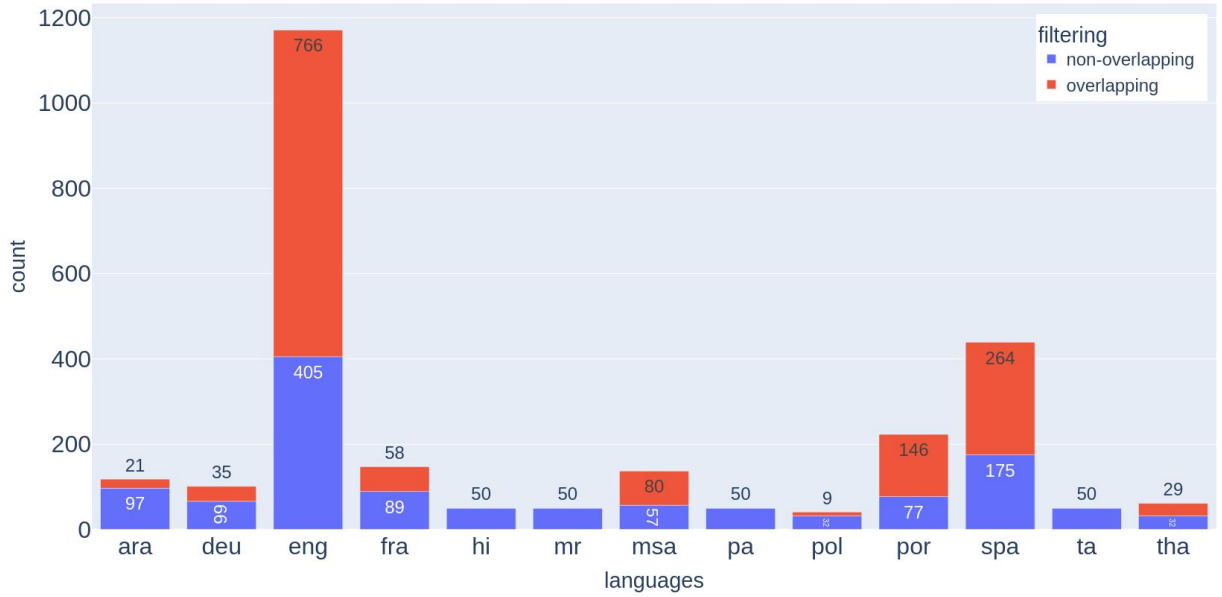

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Pre-processing: de-duplication & similarity filtering (discarded if cos. sim < 0.05)

Models & Approaches

- 9 LLMs

Model	# Params	# Langs	Citation	LoRA	Prompting
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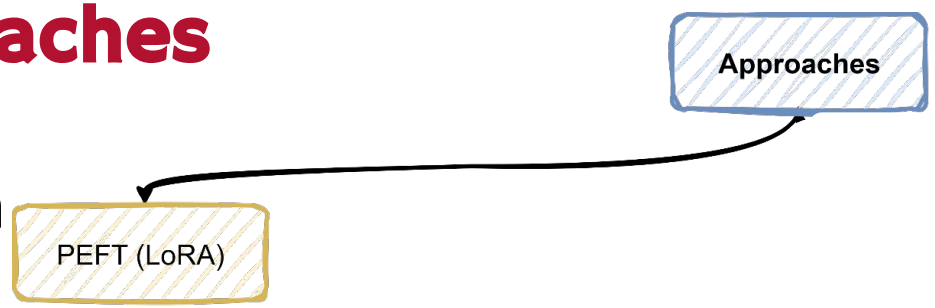

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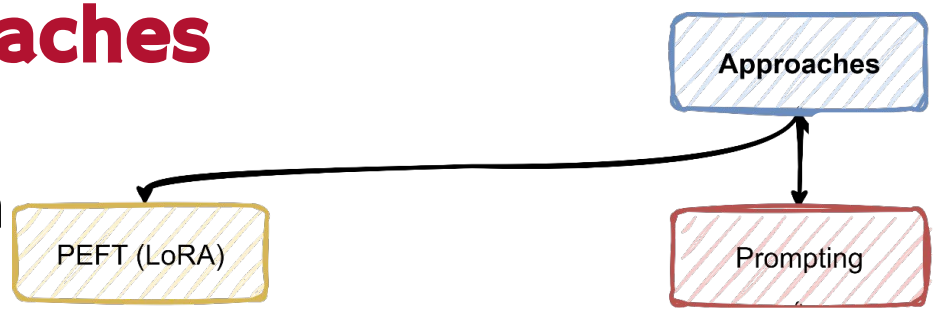

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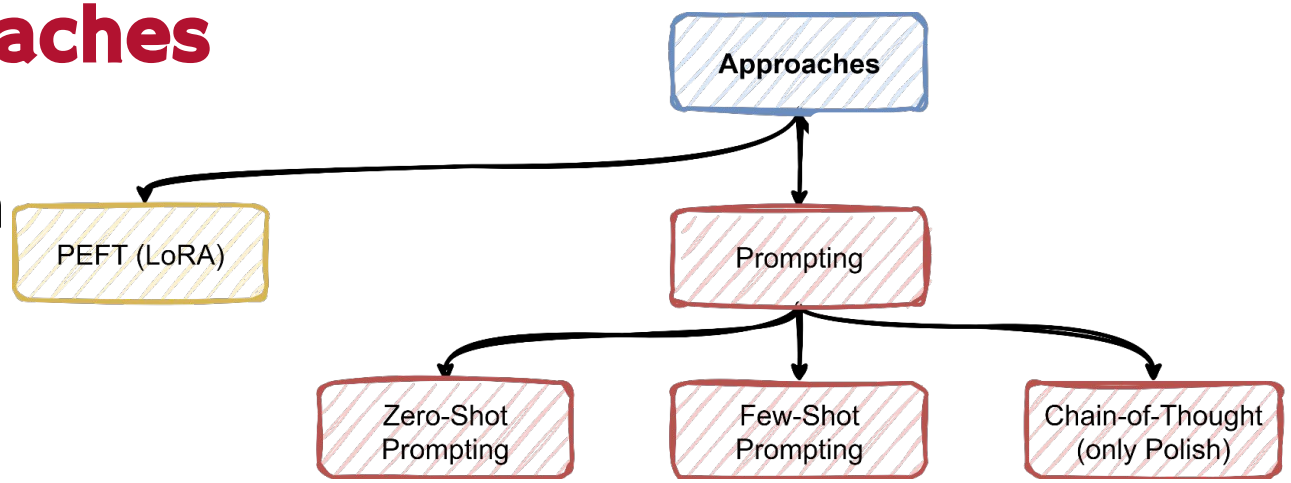

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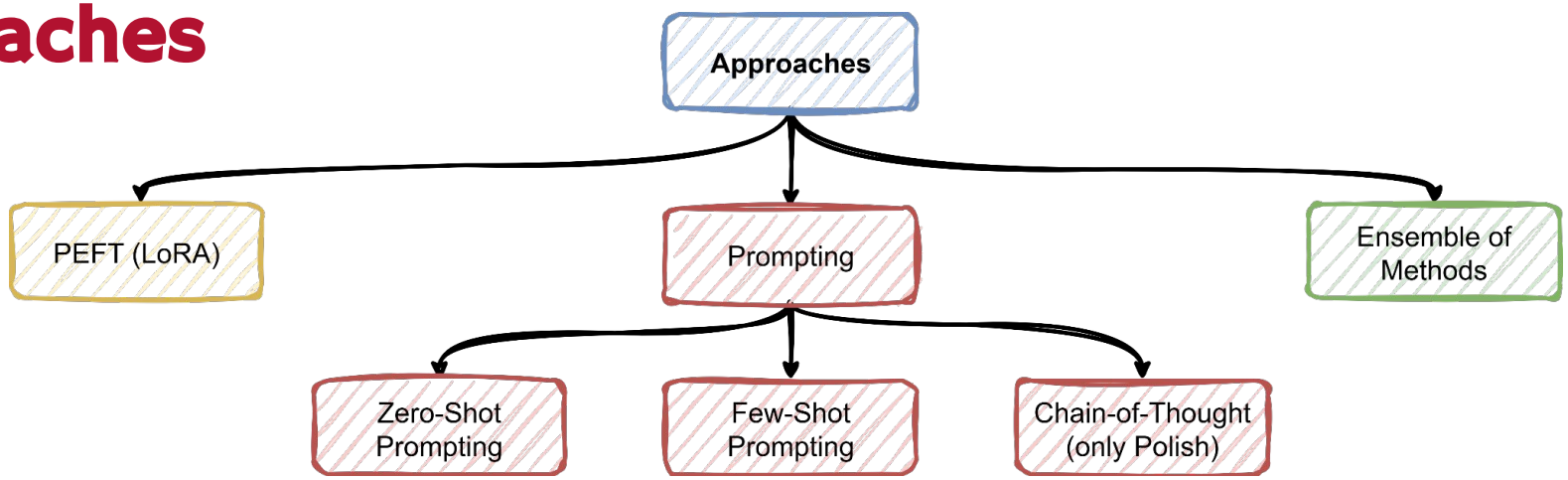

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Prompting Experiments

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- Task description + characteristics of normalized claims

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Experiments with Polish

- *Polish-CoT* vs. *Few-shot prompting*
- Experiments also with the Polish LLM

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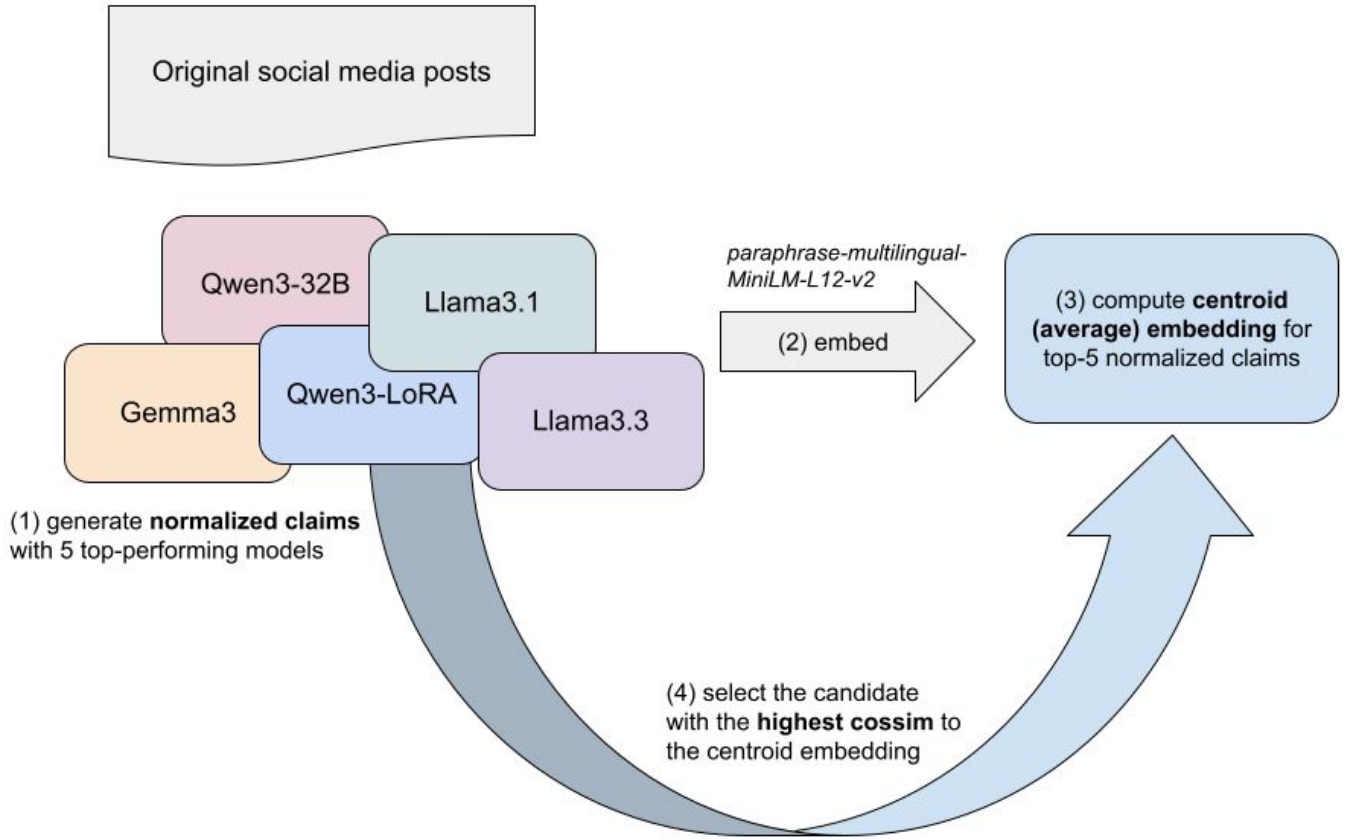

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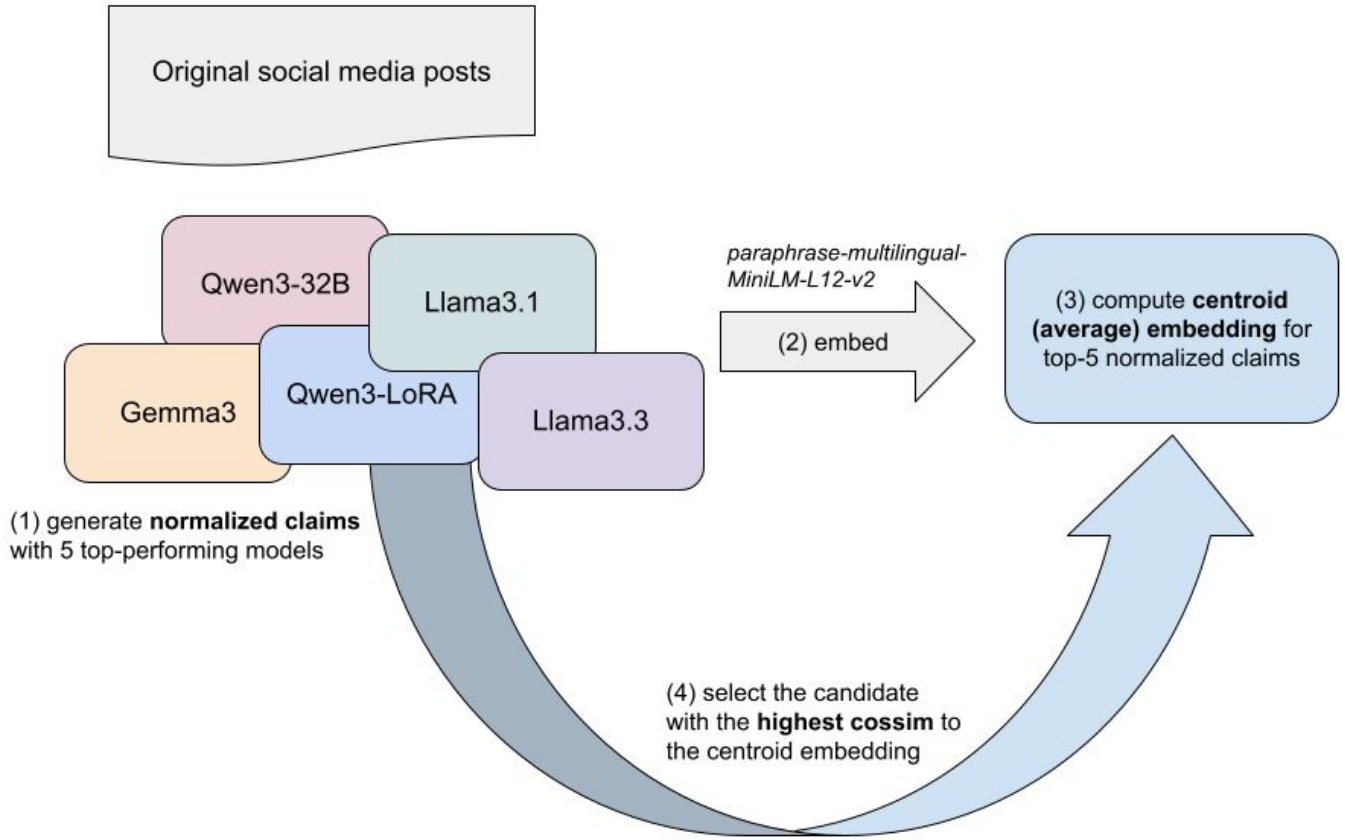

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LoRA-target	0.361	0.298	**0.658**	0.439	**0.290**	**0.311**	0.599	**0.352**	0.267	0.509	0.518	0.450	**0.217**
LoRA-all-balanced	**0.390**	0.293	N/A	**0.454**	0.285	0.287	0.570	0.309	0.265	**0.510**	0.531	0.438	0.213
LoRA-translated	0.379	**0.302**	N/A	0.430	0.254	0.297	0.551	0.290	0.236	0.497	0.509	0.332	0.175
LoRA-translated-v2	0.369	0.280	N/A	0.420	0.283	0.286	**0.623**	0.313	**0.315**	0.504	**0.535**	**0.457**	0.198

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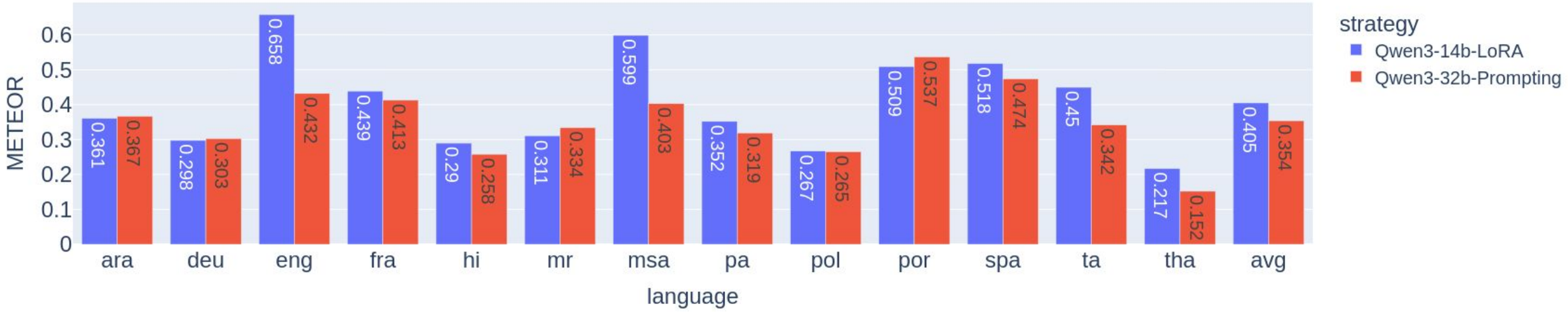

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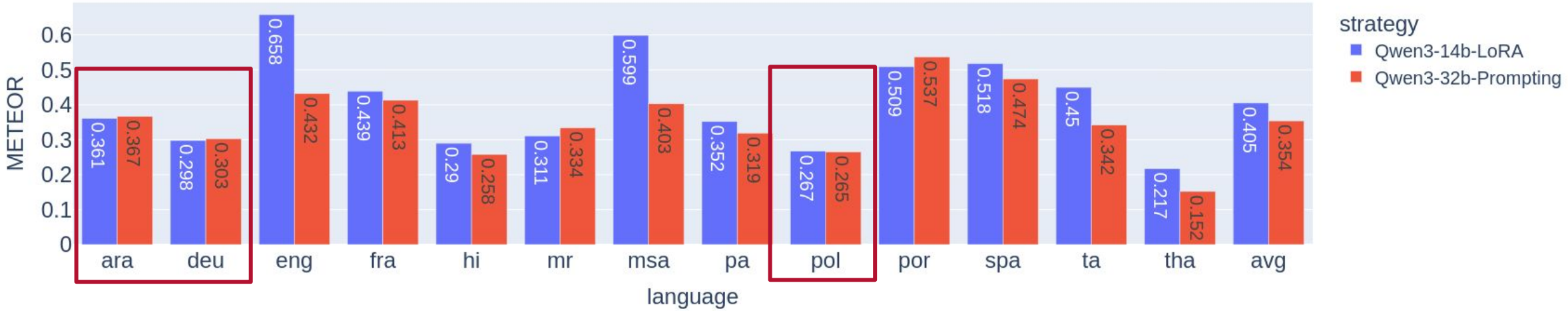
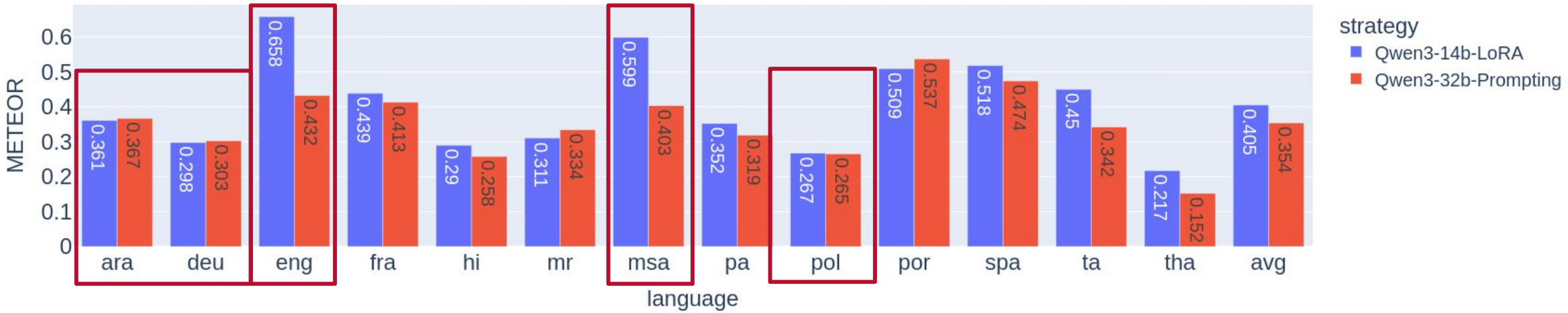
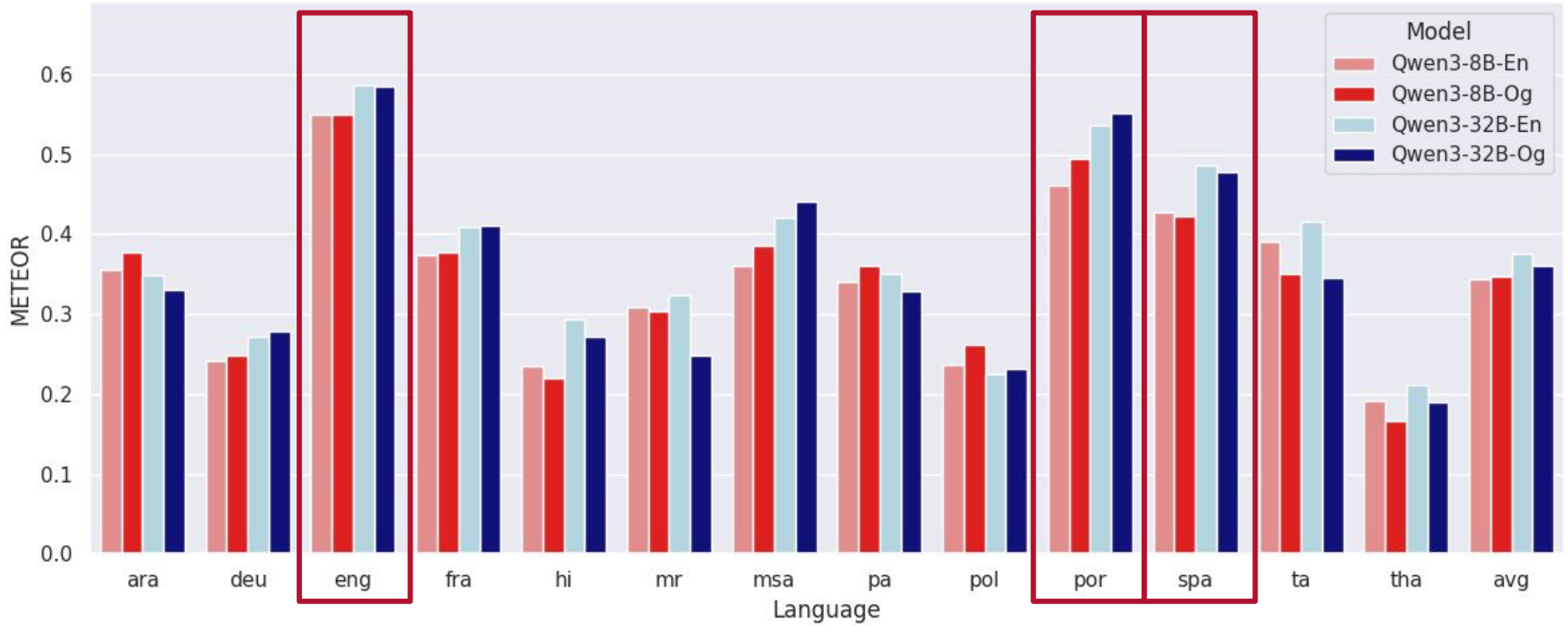


LoRA offers negligible gains for some languages but larger improvements for others



High-resource European languages demonstrated consistently strong performance



Performance of Qwen3 in the monolingual setting on the dev set using 10-shot prompting with unfiltered data for sample selection.

Multilingual models outperform the Polish LLM

Model	Prompt Type	Dev Set	Test Set
Bielik Instuct v2.3	Polish-CoT	0.198	N/A
	3-shot	0.282	0.297
Llama3.1 Nemotron Ultra	3-shot	0.254	N/A
	10-shot	**0.296**	0.347
Llama3.1 405B	10-shot	0.271	0.393
	20-shot	N/A	**0.396**

Overall Results

We ranked first on all 7 zero-shot languages and on 6 out of 13 languages in the monolingual setting

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Language	Arabic (ara)	German (deu)	English (eng)	French (fra)	Hindi (hi)	Marathi (mr)	Indonesian (msa)	Punjabi (pa)	Polish (pol)	Portuguese (por)
Best Score	0.504	0.386	0.457	0.527	0.328	0.389	0.565	0.331	0.407	0.577
Our Score	0.504	0.347	0.457	0.470	0.328	0.389	0.502	0.331	0.396	0.574
Δ (Ours vs Best)	0	-0.039	0	-0.057	0	0	-0.063	0	-0.011	-0.003
Our Strategy	Ensemble	Qwen3-32b	Ensemble	Qwen3$_{LoRA}$	Ensemble	Qwen3$_{LoRA}$	Qwen3$_{LoRA}$	Qwen3-8b	Llama3.1	Ensemble
Our Rank	1	2	1	2	1	1	2	1	2	2
Language	**Spanish (spa)**	**Tamil (ta)**	**Thai (tha)**	**Bengali$_{zero}$ (ben)**	**Czech$_{zero}$ (ces)**	**Greek$_{zero}$ (ell)**	**Korean$_{zero}$ (kor)**	**Dutch$_{zero}$ (ndl)**	**Romanian$_{zero}$ (ron)**	**Telugu$_{zero}$ (te)**
Best Score	0.608	0.632	0.586	0.378	0.252	0.262	0.134	0.200	0.295	0.526
Our Score	0.554	0.632	0.300	0.378	0.252	0.262	0.134	0.200	0.295	0.526
Δ (Ours vs Best)	-0.054	0	-0.286	0	0	0	0	0	0	0
Our Strategy	Ensemble	Qwen3$_{LoRA}$	Ensemble	Ensemble	Gemma3	Ensemble	Gemma3	Ensemble	Ensemble	Ensemble
Our Rank	2	1	3	1	1	1	1	1	1	1

We ranked first on all 7 zero-shot languages and on 6 out of 13 languages in the monolingual setting

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Best strategies – Gemma3 prompting & Ensemble method

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- Prompting works well with high-resource languages
- English prompts outperform target language in zero-shot
- Ensemble smooths out model variance and achieves the best performance in 11 out of 20 languages *(5 out 7 cases in the zero-shot setting)*

Current Challenges

- Dataset imbalance and overlap between splits

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- Missing context (especially visual, e.g., images or videos)

Future Directions

- Use LLMs for data augmentation

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- Evaluate the impact of normalized claims in fact-checking tasks

Thank you!

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