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Real-world Translator Retrieval Framework

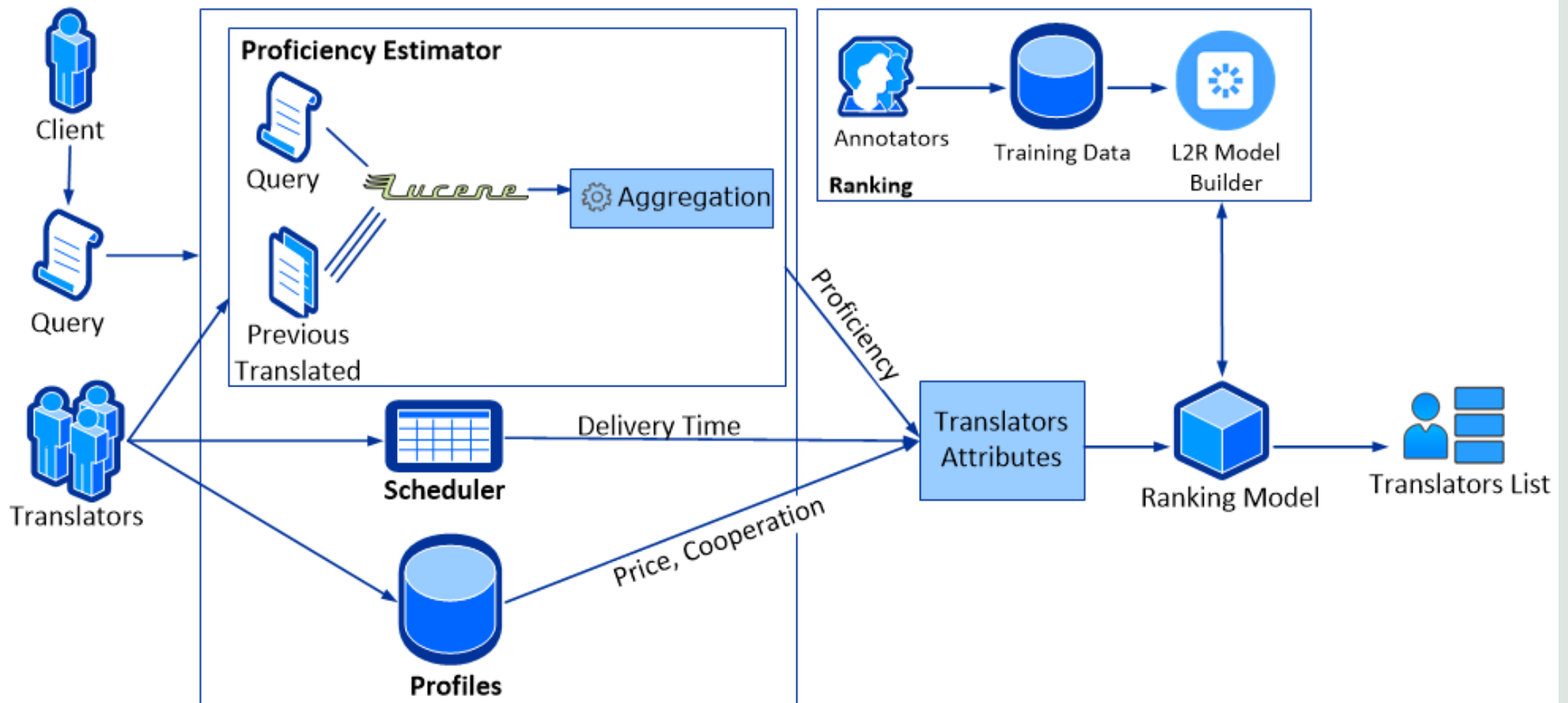
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Agenda

- Translator Recommendation
- Aggregation Functions
 - Methods and Related Work
 - Experimental Results
- Learning To Rank
 - Methods and Related Work
 - Experimental Results
- Conclusion

Translator Recommendation



Aggregation Functions - Methods

- Top1
- Top5
- GP2: Using rank of document among all

$$GP2 = \frac{\sqrt{\sqrt{2/no_docs x_i} / (\sqrt{(10/R) + R})}}{\sqrt{sq(10/R) + R + sq(10/R) + \sqrt{R * 2}}}$$

- All purchased orders (181) + Top1, Top5 and GP2 => Three lists
- Assumption: Proof-readers' assessments as golden-data (why?)
- One golden-data list
- Task: comparing the list of each algorithm with the golden-data list.
- The more similar to the golden-data list, the more appropriate for us

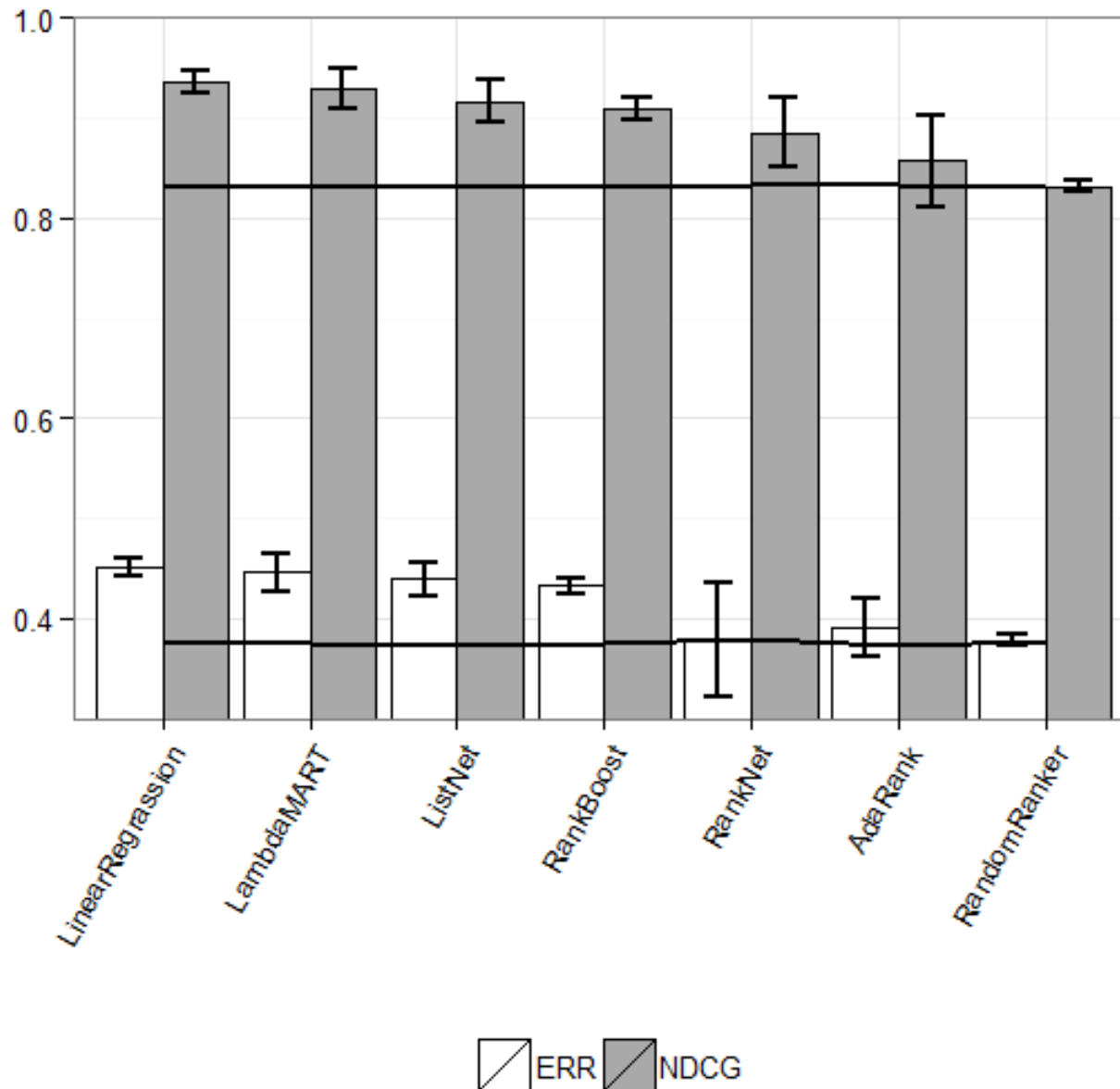
		Top1	Top5	GP2
r_s	Correlation Test	0.052	0.089	0.145
	p-Value	0.4866	0.2295	0.05038
τ	Correlation Test	0.034	0.059	0.102
	p-Value	0.5157	0.2562	0.05263

Learning to Rank - Methods

- **Pointwise:** *linear or polynomial regression*
- **Pairwise:** *RankNet, RankBoost, LambdaRank, LambdaMART*
- **Listwise:** *AdaRank, ListNet*
- **Evaluation**
 - MAP
 - [N]DCG*
 - MRR
 - ERR (Expected Reciprocal Rank)*

* *Used for graded relevance*

Learning to Rank - Experimental Results



Learning to Rank – Features

Feature	Value
Price	2.002
Duration	0.057
Proficiency	-0.048
Number of Cooperation Times	-0.313

Conclusion

- **Translator Retrieval** price, duration, proficiency and number of cooperation times
- **GP2 outperforms** while approximately weak correlation
- **Linear Regression**
- **Price and Time much more important**