

TOWARDS A NLI DATASET ANNOTATED WITH COMPLEXITY LEVELS IN BRAZILIAN PORTUGUESE

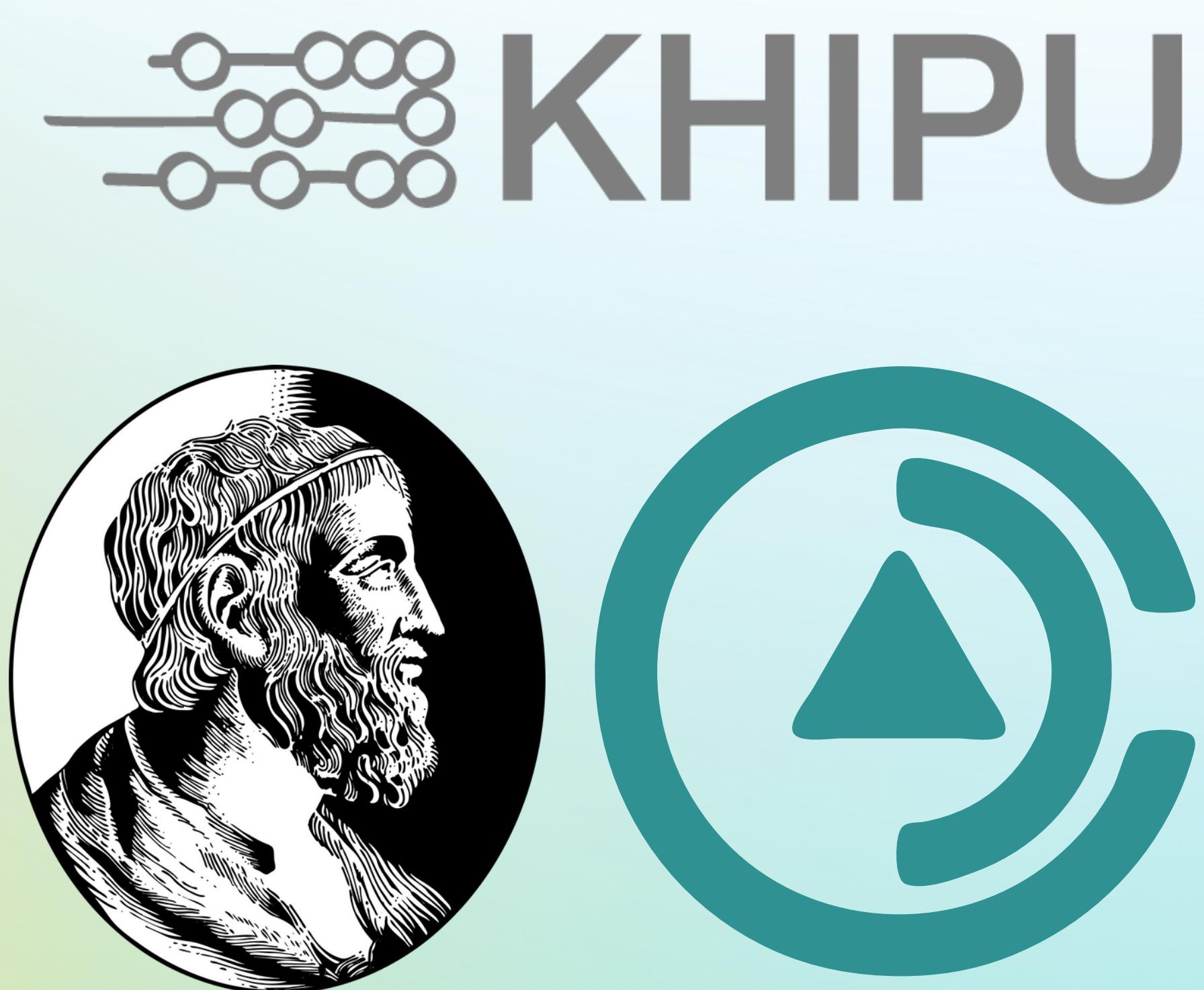
FELIPE RIBAS SERRAS¹², MARCELO FINGER¹²

¹Institute of Mathematics and Statistics

²Center for Artificial Intelligence

University of São Paulo, Brazil

frserrras@ime.usp.br



INTRODUCTION

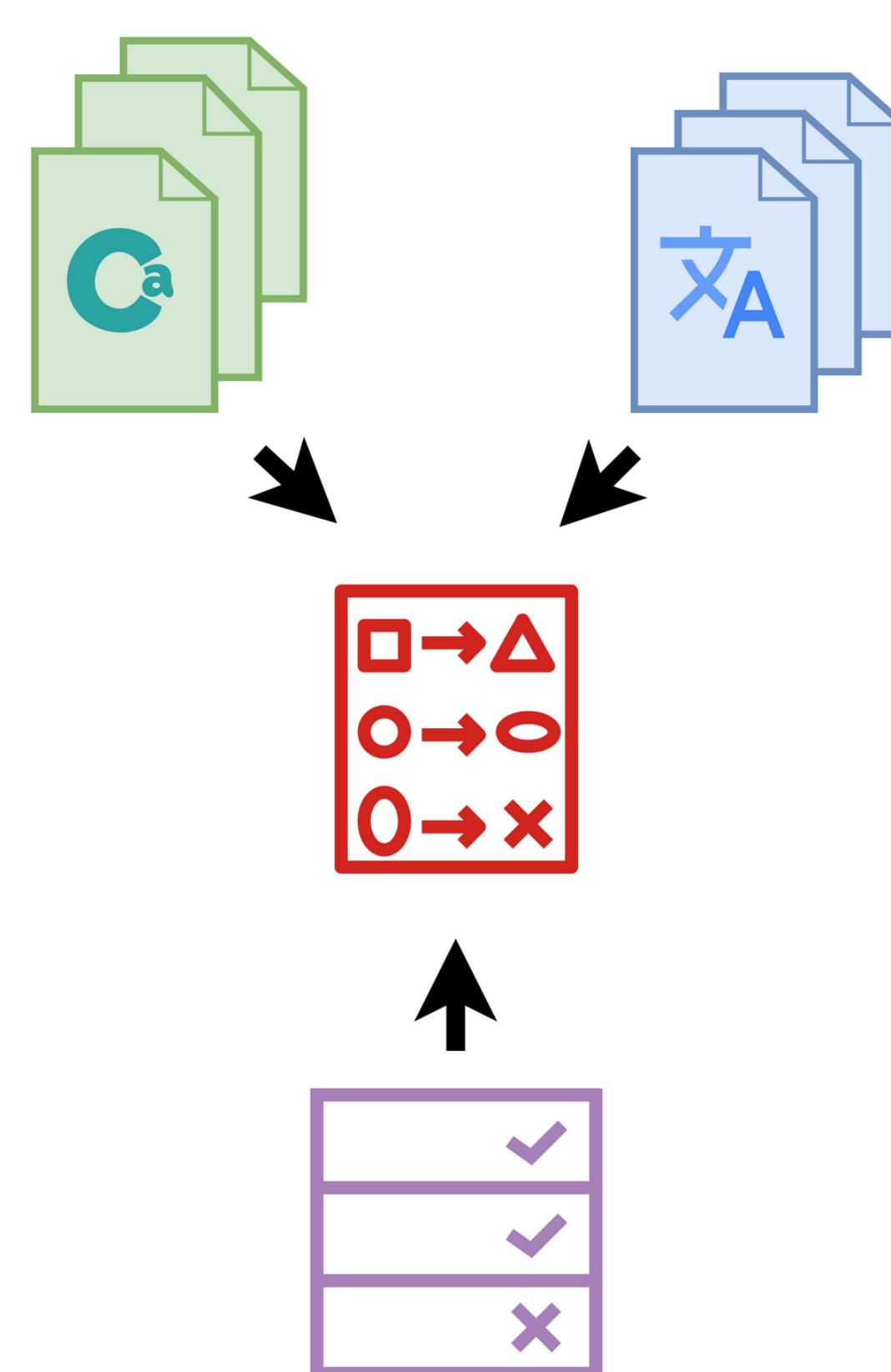
- For Natural Language Inference (NLI), **attention-based models** achieved significant improvements, however, have learned **inappropriate heuristics and negative social biases** [1,2].
- Several studies are breaking down the NLI task into its components and phenomena [3].
- There are few datasets available for NLI in Brazilian Portuguese with low-complexity texts (e.g. SICK-BR, ASSIN1, ASSIN2).

THE CINCOPE DATASET

- **CInCoPe**: a new dataset for NLI in Portuguese → more examples, more complex texts.
- Greater diversity of NLI phenomena, annotated with levels of **semantic complexity** within each phenomenon.
- Usage: better **evaluation** of current models, **curricular learning** and **ensemble learning** techniques for training.

DATA SOURCES

- **Collect** from existing Portuguese NLI datasets.
- **Translate** from English NLI datasets.
- **Mining** pairs from the Carolina Corpus.
- **Generating** synthetic pairs from templates.



A MODEL FOR SEMANTIC COMPLEXITY

- A **property of a set** of NLI pairs.
- Inspired by [5], we split complexity into two independent measures:
 - **Vertical Complexity**: the number of distinct NLI phenomena represented in the set.
 - **Horizontal Complexity**: the number of classes underlying each phenomenon represented in the set.

TRANSVERSAL FEATURES

- Ensure **typological diversity**
- Ensure **adversarial NLI pairs** for the main reasoning biases.
- Avoid **social biases** found in other NLI datasets.

REFERENCES

- [1] Gururangan, S., et al. (2018). Annotation artifacts in natural language inference data.
- [2] Rudinger, R., May, C., & Van Durme, B. (2017). Social bias in elicited natural language inferences.
- [3] Richardson, et al. (2020). Probing natural language inference models through semantic fragments.
- [4] Fonseca, et al. (2016). ASSIN: Avaliacao de similaridade semantica e inferencia textual.
- [5] Commons, M. L. (2008). Introduction to the model of hierarchical complexity and its relationship to postformal action.