



Neural Grammatical Inference

Grammatical inference, a sort of an ancient field of computer science research, is currently going through a bit of a renaissance in machine learning, namely on the fronts of natural language processing and algorithm learning. The former sub-field is revisiting the ideas of grammar induction for increased interpretability of language models, while the latter sees grammars as computational devices and hopes to utilise them as blueprint models for computation that can be learned.



Here are a few of the things we'd like to do in this area, some of which we've already started on.

1. **Inducing Context Free Grammars from Acceptor Information.** Given examples of string (not) belonging to some given language, can we construct a grammar that generates precisely that language?
2. **Inferring Context Free Grammars from Positive Examples Only.** Similar to above, but only with positive examples. This will require an entirely different approach.
3. **Inferring Context-Sensitive Grammars.**

Candidate Profile. Generally speaking, a good candidate is a competent programmer in the language of his/her choice, has good knowledge of or solid experience with TensorFlow or (Py)Torch, and is interested in one or more of the following fields: programming language theory, program synthesis, formal language theory.

Interested? Please contact us to learn more!

Contact

- Peter Belcak: belcak@ethz.ch, ETZ G61.3