

HEBI LI

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EDUCATION

Iowa State University
PhD Student in Department of Computer Science

Aug. 2014 - Aug 2019 (Expected)

University of Science and Technology of China
B.E. in Electrical Engineering

Aug. 2010 - Jun. 2014

RESEARCH AREA

- Artificial Intelligence, Causality
- Natural Language Processing
- Programming Languages & Analysis

PROGRAMMING SKILLS

- Lisp & Scheme
- C/C++
- Python

RESEARCH PROJECTS

NLP: Semantic metric for abstract doc summarization (Python, Tensorflow) *Spring 2018 - Present*

- Website & Code: <https://github.com/lihebi/anti-rouge>
- Description: ROUGE is the de facto criterion for summarization research. However, its two major drawbacks: 1. favors lexical similarity instead of semantic similarity 2. require a reference summary which may be expensive to obtain. Therefore, we introduce a completely new end-to-end metric system for summary quality assessment by leveraging recently developed **deep sentence embedding**.

AI: Causal Discovery From High Dimensional Data (Python, Tensorflow) *Spring 2018 - Present*

- Description: Causal relationships are fundamental for predictions of the consequences of actions. However, most causality research are done in low-dimensional data. We hence are interested in **causal discovery in high dimensional data** such as images and text. In particular, we are interested in mapping low-level raw pixels (micro variables) into high-level features (macro variables) that have explicit causal relations. The model is built atop **Variational Causal Encoder (VAE)**.

PL: Demand-driven Dynamic Program Analysis (C++, LLVM/Clang, Racket) *Summer 2015 - Spring 2018*

- Description: We develop a framework that debugs programs on-demand, preventing running time overhead by running just enough code. It analyzes a buggy program and generates a much smaller partial program that retains the same bug.