# ZEMING CHEN

 Semantic Scholar   Google Scholar   GitHub   zeming.chen@epfl.ch

 EPFL - Bâtiment INR, Lab 218, Lausanne, Switzerland   (076)-593-7232

## RESEARCH INTEREST

| | |
|---|---|
| **Broad:** | Natural Language Processing, Deep Learning, Computational Linguistics |
| **Specific:** | Complex reasoning over natural language, Large Language Model, Alignment & Feedback, Meta-Learning & Continual Learning, Linguistic and mechanistic interpretability |

## EDUCATION

**Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne Switzerland**  *Sep 2022 - Present*
*Doctor of Philosophy (P.h.D) in Computer Science, Natural Language Processing*
**Advisor:** Antoine Bosselut

**Rose-Hulman Institute of Technology, Terre Haute USA**  *Sep 2018 - May 2022*
**Magna Cum Laude**
*Bachelor of Science in Computer Science & Mathematics*

## PUBLICATION

### MEDITRON-70B: Scaling Medical Pretraining for Large Language Models
**Zeming Chen***, Alejandro Hernández-Cano, Angelika Romanou, Antoine Bonnet, Kyle Matoba, et al., Mary-Anne Hartley, Martin Jaggi, Antoine Bosselut
*Arxiv Preprint*

### RECKONING: Reasoning through Dynamic Knowledge Encoding
**Zeming Chen***, Gail Weiss, Eric Mitchell, Asli Celikyilmaz, Antoine Bosselut
*37st Conference on Neural Information Processing Systems (**NeurIPS 2023**)*

### Discovering Knowledge-Critical Subnetworks in Pretrained Language Models
Deniz Bayazit*, Negar Foroutan, **Zeming Chen**, Gail Weiss, Antoine Bosselut
*Arxiv Preprint*

### DISCO: Distilling Phrasal Counterfactuals with Large Language Models
**Zeming Chen***, Qiyue Gao*, Antoine Bosselut, Ashish Sabharwal, Kyle Richardson
*61st Annual Meeting of the Association for Computational Linguistics (**ACL 2023**)*

### Mitigating Label Biases for In-context Learning
Yu Fei*, Yifan Hou, **Zeming Chen**, Antoine Bosselut
*61st Annual Meeting of the Association for Computational Linguistics (**ACL 2023**)*

### Curriculum: A Broad-Coverage Benchmark for Linguistic Phenomena in Natural Language Understanding
**Zeming Chen***, Qiyue Gao
*2022 Annual Conference of the North American Chapter of the Association for Computational Linguistics - Human Language Technologies (**NAACL-HLT 2022**)*
**Oral Presentation**

### Probing Linguistic Information For Logical Inference In Pre-trained Language Models
**Zeming Chen***, Qiyue Gao
*36th AAAI Conference on Artificial Intelligence 2022 (**AAAI 2022**)*
**Oral Presentation**

### NeuralLog: Natural Language Inference with Joint Neural and Logical Reasoning
**Zeming Chen***, Qiyue Gao*, Lawrence S. Moss
*10th Joint Conference on Lexical and Computational Semantics (*SEM) 2021, Association of Computational Linguistics ***SEM 2021***

### Monotonicity Marking from Universal Dependency Trees

**Zeming Chen\***, Qiyue Gao

*14th International Conference on Computational Semantics (IWCS) 2021, Association of Computational Linguistics*
**IWCS 2021**
**Outstanding Paper Award**

### Attentive Tree Network for Monotonicity Reasoning

**Zeming Chen\***

*1st & 2nd Workshop on Natural Logic meets Machine Learning (NALOMA) 2020, Association of Computational Linguistics*

## WORK EXPERIENCE

**Allen Institute for Artificial Intelligence (AI2)**                    *June 2022 - Sep 2022*
*Research Intern, Aristo*
- Conducted research on counterfactual reasoning and LLM knowledge distillation.
- Supervised by Kyle Richardson and Ashish Sabharwal

## AWARDS

- **Outstanding Reviewer Award** ,
Annual Meeting of the Association for Computational Linguistics, ACL 2023
- **Outstanding Paper Award**,
14th International Conference on Computational Semantics (IWCS) 2021
- **Frank Young Outstanding Scholarship Award**,
Rose-Hulman Institute of Technology, Department of Computer Science and Software Engineering
- **Michael Atkins Outstanding Senior Thesis Award**,
Rose-Hulman Institute of Technology, Department of Computer Science and Software Engineering

## OPEN SOURCE PROJECTS

- **MediTron-70B**
Meditron is a suite of open-source medical Large Language Models (LLMs).
**1000 Stars**
- **Megatron-LLM**
This library enables pre-training and fine-tuning of large language models (LLMs) at scale.
**346 Stars**

## PROGRAM COMMITTEE & REVIEWER SERVICE

| | |
|---|---:|
| **12th ICLR Conference** 2023 | *1 review* |
| **38th AAAI Conference** 2023 | *6 reviews* |
| **EMNLP 2023 Conference** 2023 | *5 reviews* |
| **61th ACL Conference** 2023 | *6 reviews* |
| **37th AAAI Conference** 2022 | *3 reviews* |
| **AAAI Magazine** 2022 | *2 reviews* |
| **AAAI Magazine** 2021 | *3 reviews* |

## PROGRAMMING SKILLS

| | |
|---|---|
| **Programming:** | Python, Java, JavaScript, C/C++, SQL, HTML/CSS |
| **Software Tools & Libraries:** | **Deep Learning:** Pytorch, Tensorflow, Pytorch-lightning, Ray |
| | **NLP:** Transformers, AllenNLP, CoreNLP, OpenAI |
| | **Robotics:** ROS, OpenCV, MATLAB |
| | **Full Stack:** Spring Boot, React JS, Angular, electron.js |
| | **Database:** MongoDB, Microsoft SQL Server, MySQL, Firebase |

## TEACHING ASSISTANCE

**CS 552** Modern Natural Language Processing                    *Spring 2023*
**CSSE 230** Algorithm Design and Analysis                       *Spring 2022*
**CSSE 413** Artificial Intelligence                             *Fall 2021*
**CSSE 374** Software Design                                     *Winter 2020*