

# Ziqing Huang

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## Research Interests

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- ◇ Natural Language Processing (NLP)
- ◇ Machine Learning (ML)

## Education

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- ◇ B. Eng. in Computer Science and Technology, Tsinghua University Aug. 2019 - Present
  - Yao Class, Institute for Interdisciplinary Information Sciences (IIIS), led by Prof. [Andrew Yao](#)
  - GPA: 3.96/4, Rank: 9/94

## Research Experience

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- ◇ [THUDM](#), Tsinghua University Sep. 2022 - Present  
Advisor: Prof. [Zhilin Yang](#)
  - We used Large Language Models to **generate web pages from natural language**, using different levels of inputs, such as the content on the page and the description of the style.
- ◇ [Princeton NLP](#), Princeton University Feb. 2022 - Jan. 2023  
Advisor: Prof. [Danqi Chen](#)
  - We widely explored the **generalization ability** of BM25 and dense retrieval models.
  - We proposed **corpus poisoning attacks** and demonstrated that our method can successfully attack state-of-the-art dense retrievers with a small number of adversarial passages.
  - Submitted to ACL 2023.
- ◇ [THUNLP](#), Tsinghua University Aug. 2021 - Feb. 2022  
Advisors: Prof. [Zhiyuan Liu](#) (Tsinghua University), Prof. [Chenyan Xiong](#) (Microsoft Research)
  - We built a strong baseline on MS MARCO passage retrieval task based on ANCE and OpenMatch.
  - We used a **memory bank** to include more negative samples in a single batch to improve retrieval performance with an affordable batch size.

## Publications

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- ◇ Corpus Poisoning Attacks for Dense Retrievers Submitted to ACL 2023  
[Zexuan Zhong](#)\*, [Ziqing Huang](#)\*, [Alexander Wettig](#), [Danqi Chen](#)
  - We proposed **corpus poisoning**, as a new attack for dense retrievers, in which adversarial passages are inserted into the corpus to mislead their retrieval outputs.
  - Our method demonstrated that even a small number of adversarial passages can successfully attack state-of-the-art dense retrievers and they can further generalize to queries from unseen domains.
  - We proposed two potential defenses to the attack for future investigation.

## Selected Course Project

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- ◇ Open-Domain Question Answering [[Report](#)] Fall 2021  
Instructor: Prof. [Zhilin Yang](#) Course project of Natural Language Processing
  - We improved the robustness of queries through data augmentation in retrieval, making the queries more information-dense by adding several types of related texts. Our improved method achieved state-of-the-art retrieval accuracy of passage retrievers.

## Selected Honors and Awards

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- ◇ [Yao Award](#), Recognition Prize | IIIS, Tsinghua University 2022
- ◇ Academic Excellence Award | Tsinghua University 2022
- ◇ Outstanding Student Leaders | Tsinghua University 2021, 2022
- ◇ Comprehensive Excellence Award | Tsinghua University 2020, 2021
- ◇ First Place in the National College Entrance Examination (Science) | Beijing, China 2019

## Extracurricular Activities

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- ◇ Vice President of the Student Union | IIIS, Tsinghua University Oct. 2021 - Present
- ◇ Leader of IIIS Tennis Club | IIIS, Tsinghua University Mar. 2022 - Present
- ◇ Member of the Student Union | IIIS, Tsinghua University Sep. 2020 - Oct. 2021
- ◇ Class Leader | Yao Class 92, IIIS, Tsinghua University Sep. 2020 - Sep. 2021