



Sedrick Scott Keh

 [sedrickkeh](https://github.com/sedrickkeh)  [Sedrick Keh](https://twitter.com/SedrickKeh)

Email : sedrickkeh@gmail.com

Website : <https://sedrickkeh.github.io>

EDUCATION

- **Carnegie Mellon University** Pittsburgh, PA
MS in Machine Learning, GPA: 4.08/4.33 *Sept. 2021 – Dec. 2022*
- **Hong Kong University of Science and Technology** Hong Kong
BSc in Data Science; BSc in Mathematics – First Class Honors, GPA: 4.09/4.30 *Sept. 2017 – Jun. 2021*

RESEARCH EXPERIENCE

- **Toyota Research Institute** May 2023 - Present
Machine Learning Research Engineer
 - **Pre-training:** Investigating various data mixtures for pre-training. Also looking into transformer attention mechanism modifications. Trained multiple 1B to 7B models from scratch [10].
 - **Alignment:** Supervised fine-tuning (SFT) vs reinforcement learning with AI feedback (RLAIF) [11].
 - **Code Generation:** Trained small and medium-sized code models (both from scratch and uptrained).
 - **Multimodal Models:** Currently investigating pre-training for vision-language models and LLM planning for robotics applications.
- **Carnegie Mellon University – Language Technologies Institute** Sept. 2021 - May 2023
Advised by Prof. Daniel Fried and Prof. Eduard Hovy
 - **Multimodal Models, Grounded Interaction:** Visually-grounded question generation in a collaborative uncertainty resolution task [1].
 - **Creative and Controllable Text Generation:** Commonsense reasoning and data augmentation strategies to generate figurative language [2] [3] [4] [6]
- **Carnegie Mellon University – Institute for Software Research** Sept. 2021 - May 2023
Advised by Prof. Fei Fang
 - **AI/NLP for Social Good:** Deployed a multilingual system to automatically extract and classify news articles related to wildlife conservation. Collaboration with international WWF offices [5] [9].
- **HKUST Statistics and Machine Learning Group** Feb. 2020 - Dec. 2021
Advised by Prof. Tong Zhang
 - **NLP for Social Networks:** Created an intelligent social media captioning model which makes predictions by considering closely related posts and replies [8].
 - **Story Generation:** Explored prompt-based methods for story completion tasks.

PEER-REVIEWED PUBLICATIONS

[1] [Asking More Informative Questions for Grounded Retrieval](#)

Sedrick Scott Keh, Justin T. Chiu, Daniel Fried.

Findings of the Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL Findings 2024). June 2024.

[2] [PINEAPPLE: Personifying INanimate Entities by Acquiring Parallel Personification data for Learning Enhanced generation](#)

Sedrick Scott Keh, Kevin Lu, Varun Gangal, Steven Y. Feng, Harsh Jhamtani, Malihe Alikhani and Eduard Hovy.

International Conference on Computational Linguistics (COLING 2022). October 2022.

- [3] [EUREKA: EUphemism Recognition Enhanced through Knn-based methods and Augmentation](#)
*Sedrick Scott Keh**, Rohit K. Bharadwaj*, Emmy Liu, Simone Tedeschi, Varun Gangal and Roberto Navigli.
The Third Workshop on Figurative Language Processing (EMNLP 2022). December 2022.
- [4] [Exploring Euphemism Detection in Few-Shot and Zero-Shot Settings](#)
Sedrick Scott Keh.
The Third Workshop on Figurative Language Processing (EMNLP 2022). December 2022.
- [5] [NewsPanda: Media Monitoring for Timely Conservation Action](#)
*Sedrick Scott Keh**, Zheyuan Ryan Shi*, David J. Patterson, Nirmal Bhagabati, Karun Dewan, Areendran Gopala, Pablo Izquierdo, Debojyoti Mallick, Ambika Sharma, Pooja Shrestha, and Fei Fang.
Conference on Innovative Applications of Artificial Intelligence (IAAI 2023). February 2023.
- [6] [PANCETTA: Phoneme Aware Neural Completion to Elicit Tongue Twisters Automatically](#)
Sedrick Scott Keh, Steven Y. Feng, Varun Gangal, Malihe Alikhani and Eduard Hovy..
Conference of the European Chapter of the Association for Computational Linguistics (EACL 2023). May 2023.
- [7] [Hashtag-Guided Low-Resource Tweet Classification](#)
*Shizhe Diao**, *Sedrick Scott Keh**, Liangming Pan, Zhiliang Tian, Yan Song and Tong Zhang..
International World Wide Web Conference 2023 (WWW 2023). May 2023.
- [8] [Doolittle: Benchmarks and Corpora for Academic Writing Formalization](#)
Shizhe Diao, Yongyu Lei, Liangming Pan, Tianqing Fang, Wangchunshu Zhou, Sedrick Scott Keh, Min-Yen Kan, Tong Zhang.
Conference on Empirical Methods in Natural Language Processing 2023 (EMNLP 2023).
December 2023.
- [9] [Where It Really Matters: Few-Shot Environmental Conservation Media Monitoring for Low-Resource Languages](#)
Sameer Jain, Sedrick Scott Keh, Shova Chettri, Karun Dewan, Pablo Izquierdo, Johanna Prussman, Pooja Shrestha, César Suárez, Zheyuan Ryan Shi, Lei Li, Fei Fang.
The 38th Annual AAI Conference on Artificial Intelligence (AAAI 2024). February 2024.

PREPRINTS AND PAPERS IN SUBMISSION

- [10] [Over-trained Language Models Scale Reliably on Downstream Tasks](#)
Samir Yitzhak Gadre, Georgios Smyrnis, Vaishaal Shankar, [...], Sedrick Keh, [...], Ludwig Schmidt
arXiv:2403.08540. March 2024.
- [11] [A Critical Evaluation of AI Feedback for Aligning Large Language Models](#)
Archit Sharma, Sedrick Keh, Eric Mitchell, Chelsea Finn, Kushal Arora, Thomas Kollar
arXiv:2402.12366. February 2024.
- [12] [Semi-Supervised Noisy Student Pre-training on EfficientNet Architectures for Plant Pathology Classification](#)
Sedrick Scott Keh
arXiv:2012.00332. December 2020.
- [13] [Myers-Briggs Personality Indicator Classification and Language Generation Using Pre-trained Language Models](#)
Sedrick Scott Keh, I-Tsun Cheng.
arXiv:1907.06333. July 2019.
- [14] [MagmaDNN: Towards High-Performance Deep Learning Using Magma](#)
Daniel Nichols, Sedrick Scott Keh, Kam Fai Chan.
Technical Report. July 2019.

AWARDS AND SCHOLARSHIPS

- **Scholarship** – HKUST Full Undergraduate Scholarship (\$560,000 HKD) 2017-2021
- **Scholarship** – S.S. Chern Class Mathematics Achievement Scholarship (\$30,000 HKD) 2018-2021
- **Finalist (Top 20; training pool for IMO)** – Philippine Mathematical Olympiad 2015, 2016, 2017
- **Finalist (Top 30; training pool for IOI)** – National Olympiad in Informatics 2017

ACADEMIC SERVICE AND TEACHING

- **Reviewer:** ACL (2023, 2024), EMNLP (2022, 2023), NAACL (2024), COLM (2024), ARR (2023, 2024), EMNLP FigLang Workshop (2022, 2024)
- **Conference Volunteer:** EMNLP 2022 (Abu Dhabi, UAE)
- **Teaching Assistant:** 10-617 Intermediate Deep Learning (Graduate-level) Fall 2022
- **Teaching Assistant:** 10-315 Advanced Introduction to Machine Learning Spring 2022
 - Nominated for the 2022 Alan J. Perlis Graduate Student Teaching Award
- **Mentor:** CMU Undergraduate AI Mentorship Program

INDUSTRY EXPERIENCE

- **Thinking Machines Data Science** Jun. 2021 - Aug. 2021
 - *Machine Learning Research Intern (Geospatial Team)*
- **Senti AI Tech Labs** Jul. 2020 - Sept. 2020
 - *NLP Research Intern*