沙颖凯

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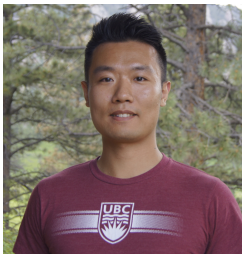

教育经历

英属哥伦比亚大学（UBC），地球海洋和大气科学系（EOAS），博士 2017.05 - 2022.01
- 导师：Prof. Roland Stull

英属哥伦比亚大学（UBC），地球海洋和大气科学系（EOAS），硕士 2014.09 - 2017.05
- 导师：Prof. Susan Allen

南京信息工程大学，大气科学系，学士 2010.09 - 2014.06

工作和访问学者经历

美国国家大气研究中心（NCAR），计算信息系统实验室（CISL），博士后 2024.08 - present
- 项目：Advanced Study Program (ASP)
- 导师：Dr. David John Gagne II

美国国家大气研究中心（NCAR），中小尺度气象实验室（MMM），博士后 2022.06 - 2024.08
- 项目：Advanced Study Program (ASP)
- 导师：Dr. Ryan A. Sobash

英属哥伦比亚大学（UBC），地球海洋和大气科学系（EOAS），博士后 2022.01 - 2022.06
- 导师：Prof. Roland Stull

美国国家大气研究中心（NCAR），计算信息系统实验室（CISL），访问学者 2019.06 - 2019.12
- 访问学者项目：Advanced Study Program (ASP)
- 合作科学家：Dr. David John Gagne II

研究方向

- 人工智能天气预报、气候预测；基于人工智能方法的集合预报生成。
- 数值天气预报后处理、灾害性天气预警、临近期预报、误差订正、区域降尺度。

项目

- 美国大气海洋局（NOAA）交叉技术转化试验项目（JTTI），Using convective mode information for hazard prediction with convection-allowing models，结题，博士后参加。
  - 项目期间负责区域尺度数值天气预报模式的集合成员生成和面向灾害性天气过程的后处理。
  - GitHub: https://github.com/yingkaisha/AIES_24_0063
- 美国国家自然科学基金会项目（NSF），Artificial Intelligence for Environmental Sciences (AI2ES)，在研，博士后参加
  - 项目期间作为核心成员开发 NSF NCAR 的 AI-天气预报模式平台 Community Research Earth Digital Intelligence Twin (CREDIT).
  - GitHub: https://github.com/NCAR/miles-credit

学位论文

- 博士：Sha, Y., 2021: Post-processing Precipitation Forecasts in British Columbia with Deep Learning Methods. Electronic Theses and Dissertations (ETDs) 2008+. University of British Columbia.

- 硕士: Sha, Y., 2017: A comprehensive simulation study of dissolved Barium and Oxygen isotope ratio in the Arctic Ocean. Electronic Theses and Dissertations (ETDs) 2008+. University of British Columbia.

期刊论文

- **Sha***, Y., J. Schreck, W. Chapman, D. J. Gagne II, 2025: Improving AI weather prediction models using global mass and energy conservation schemes. Submitted to: *Journal of Advances in Modeling Earth Systems*. pre-print: https://arxiv.org/abs/2501.05648
- Schreck, J., Y. **Sha**, W. Chapman, D. Kimpara, J. Berner, S. McGinnis, A. Kazadi, N. Sobhani, B. Kirk, and D. J. Gagne II, 2024: Community Research Earth Digital Intelligence Twin (CREDIT). Submitted to: *Geophysical Research Letters*. pre-print: https://arxiv.org/abs/2411.07814
- **Sha***, Y., R. A. Sobash, D. J. Gagne II, 2024: Improving ensemble extreme precipitation forecasts using generative artificial intelligence. In review: *Artificial Intelligence for the Earth Systems*. pre-print: https://arxiv.org/abs/2407.04882
- **Sha***, Y., R. A. Sobash, D. J. Gagne II, 2023: Generative ensemble deep learning severe weather prediction from a deterministic convection-allowing model. *Artificial Intelligence for the Earth Systems*, 3(2), p.e230094. https://journals.ametsoc.org/view/journals/aies/3/2/AIES-D-23-0094.1.xml
- **Sha***, Y., D. J. Gagne II, G. West, and R. Stull, 2022: A hybrid analog-ensemble, convolutional-neural-network method for post-processing precipitation forecasts. *Monthly Weather Review*, 150, 1495–1515. https://journals.ametsoc.org/view/journals/mwre/150/6/MWR-D-21-0154.1.xml
- **Sha***, Y., D. J. Gagne II, G. West, and R. Stull, 2021: Deep-learning-based precipitation observation quality control. *Journal of Atmospheric and Oceanic Technology*, 38, 1075-1091. https://journals.ametsoc.org/view/journals/atot/38/5/JTECH-D-20-0081.1.xml
- **Sha***, Y., D. J. Gagne II, G. West, and R. Stull, 2020: Deep-learning-based gridded downscaling of surface meteorological variables in complex terrain. Part I: Daily maximum and minimum 2-m temperature. *Journal of Applied Meteorology and Climatology*, 59, 2057–2073. https://journals.ametsoc.org/view/journals/apme/59/12/jamc-d-20-0057.1.xml
- **Sha***, Y., D. J. Gagne II, G. West, and R. Stull, 2020: Deep-learning-based gridded downscaling of surface meteorological variables in complex terrain. Part II: Daily precipitation. *Journal of Applied Meteorology and Climatology*, 59, 2075–2092. https://journals.ametsoc.org/view/journals/apme/59/12/jamc-d-20-0058.1.xml

会议报告

- **Sha**, Y., R. A. Sobash, D. J. Gagne II. Improving ensemble extreme precipitation forecasts using generative artificial intelligence, 105th American Meteorological Society Annual Meeting, New Orleans, Louisiana, 2025-1-13.
- **Sha**, Y., R. A. Sobash, D. J. Gagne II, C. Schwartz. Ensemble probabilistic severe weather prediction using convection-allowing models and deep generative models, 104th American Meteorological Society Annual Meeting, Baltimore, Maryland, 2024-1-28.
- **Sha**, Y., R. A. Sobash, D. J. Gagne II, C. Schwartz. Next-day probabilistic severe Weather predictions Using convection-allowing models and convolutional neural networks. 103rd American Meteorological Society Annual Meeting, Denver, Colorado, 2023-1-8.
- **Sha**, Y., D. J. Gagne II, G. West, R. Stull. Precipitation forecast enhancement with a hybrid of analog ensemble, Schaake shuffle, and convolutional neural networks. The third NOAA Workshop on Leveraging AI in Environmental Sciences, Virtual, 2021-9-13.
- **Sha**, Y., D. J. Gagne II, G. West, R. Stull. Deep-learning-based precipitation observation quality control. Canadian Meteorological and Oceanographic Society (CMOS) 55th Congress, Victoria, British Columbia, 2021-5-31.
- **Sha**, Y., D. J. Gagne II, G. West, R. Stull. Precipitation forecast enhancement with a hybrid of analog ensemble and convolutional neural networks. Canadian Meteorological and Oceanographic Society (CMOS) 55th Congress, Victoria, British Columbia, 2021-5-31.
- **Sha**, Y., D. J. Gagne II, G.West, R. Stull: Generalizable spatial downscaling of 2-m temperature with multiple data sources - Insights from the recent advances in deep learning. 101st American Meteorological Society Annual Meeting, Virtual, 2020-1-10.

- **Sha**, Y., D. J. Gagne II, G.West, R. Stull: Generalizable spatial downscaling of 2-m temperature with multiple data sources - Insights from the recent advances in deep learning. American Geophysical Union (AGU) Fall Meeting 2020, Virtual, 2020-12-01.
- **Sha**, Y., D. J. Gagne II, G.West, R. Stull: Precipitation observation quality control with deep learning in complex terrain. American Geophysical Union (AGU) Fall Meeting 2019, San Francisco, California, 2019-12-09.
- **Sha**, Y., D. J. Gagne II, G. West, R. Stull: Deep learning for downscaling gridded daily temperature and precipitation in complex terrain. CISL/NCAR Seminar Series, Boulder, Colorado. 2019-11-01.