**Sheng, Dong 盛 东**

PhD cand. @ School of Engineering, Westlake University.

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**Research Interest**

Agroecology, Pollination, Microplastics, Climate Change, Ecosystem Services, Artificial Intelligence, Computer Vision, System modelling

**Education**

**PhD candidate** in Environmental Sciences & Engineering 2023 Sept – present

School of Engineering, Westlake University (joint program with Zhejiang University)

Supervisors: Thomas Cherico Wanger & Ling Li (李凌)

**Visiting PhD student** 2025 Sept – present

Department of Plant Production Systems, Agroscope

Supervisor: Thomas Cherico Wanger

**Bachelor of Science** in Environmental Sciences 2019 Sept – 2023 Jun

College of Environmental & Resource Sciences, Zhejiang University

General GPA = 3.81/4.00

**Minor** in Advanced Honor Class of Engineering Education 2020 Sept – 2023 Jun

Chu Kochen Honors College, Zhejiang University

**Memberships**

Student Member | The Ecological Society of America 2024 – present

Core Member | The Scientists’ Coalition for an Effective Plastics Treaty 2025 – present

**Publications**

Xu, W., Barzegar, S. G., **Sheng, D.**, Toledo-Hernández, M., Lan, Z., & Wanger, T. C. (2025). Identifying Cocoa Flower Visitors: A Deep Learning Dataset. *Scientific Data*, *12*(1), 1309. <https://doi.org/10.1038/s41597-025-05631-3>

**Sheng, D.**, Jing, S., He, X., Klein, A.-M., Köhler, H.-R., & Wanger, T. C. (2024). Plastic pollution in agricultural landscapes: An overlooked threat to pollination, biocontrol and food security. *Nature Communications*, *15*(1), 8413. <https://doi.org/10.1038/s41467-024-52734-3>

Darras, K. F. A., Balle, M., Xu, W., Yan, Y., Zakka, V. G., Toledo‐Hernández, M., **Sheng, D.**, Lin, W., Zhang, B., Lan, Z., Fupeng, L., & Wanger, T. C. (2024). Eyes on nature: Embedded vision cameras for terrestrial biodiversity monitoring. *Methods in Ecology and Evolution*, 2041-210X.14436. <https://doi.org/10.1111/2041-210X.14436>

**Sheng, D.**, Chen, M., Chen, Q., Huang, Y. (2022). Opposite selection effects of nZVI and PAHs on bacterial community composition revealed by universal and sphingomonads-specific 16SrRNA primers. *Environmental Pollution*, 311, 119893. <https://doi.org/10.1016/j.envpol.2022.119893>

**Conferences & Presentations**

The 2024 Annual Meeting of the Ecological Society of America, Long Beach, California, United States. (2024, August 8). Title: *Long-term exposure to microplastics and heat affects bumblebee colony development, behavior patterns and social networks*.

Westlake University Interdisciplinary Frontier Forum on Sustainable Development and Environmental Sciences, Hangzhou, Zhejiang , China. (2024, March 31). Title: *Nano/microplastic effects in agricultural landscapes: an overlooked threat to pollination, biological pest control and food security*

**Patents**

Wanger, T. C., **Sheng, D.**, Wang, L., Yuan, X. (2023). *Detection method and apparatus, object monitoring system, computing device, and storage medium* (CN 120124651 A; US 20250190729 A1). China National Intellectual Property Administration, 2025-06-10; United States Patent and Trademark Office, 2025-06-12.

**Selected Honors & Awards**

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| Award of Honor for Graduate | Zhejiang University | 2024 |
| Exploration Award | Westlake University | 2024 |
| Certificate of Chu Kochen Honors Program | Zhejiang University | 2023 |
| The 18th Zhejiang Province “Challenge Cup” Academic and Technological Competition for College Students (Silver Award) | 2023 |
| Interdisciplinary Contest in Modeling (Honorable Mention) | The Consortium for Mathematics and Its Application | 2022 |
| Zhejiang University – Jiande Scholarship (Second Prize) | 2021 |
| Zhejiang Province Physics Innovation (Theoretical) Competition for College Students  (First Prize) | Zhejiang Physical Society | 2020 |
| Zhejiang University Scholarship (Second Prize) | 2019 |

**Other Experiences**

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| Visiting student | SASE Lab, Westlake University | 2022 May – 2023 Aug |
| Bioinformatics analysis (supervised by Dr. Yili Huang) | Zhejiang University | 2021 Nov – 2022 Sept |
| Internship | Zhejiang Ecology & Environment Design and Research Institute | 2022 Jul – 2022 Sept |
| Summer session | University of California, Berkeley.  Environmental Earth Sciences (EPS-80), A- | 2021 Aug |

**Skills**

Software: Python, MATLAB, R, C/C++, CAD, SolidWorks, SketchUp

Experiment: Raman spectrum, optical microscope, basic chemical/biological experiments

Data analysis: machine learning, computer vision, meta-analysis