

# Yankai Jiang

☎ (+1)773-997-6553    🌐 [lukejyk.github.io/](https://lukejyk.github.io/)    📍 140, Fenway, MA 02115, USA

## Education

### Northeastern University

*Ph.D. in Computer Engineering*

Boston, MA

*Sept. 2023 – Present*

- **Advisor:** Prof. Devesh Tiwari
- **Research Interests:** Sustainable Computing, High Performance Computing, Cloud Computing

### Northwestern University

*M.S. in Computer Engineering*

Evanston, IL

*Sept. 2021 – Jun. 2023*

### Xi'an Jiaotong University

*B.E. in Automation (Youth Program, equivalent to Honors Program)*

Xi'an, China

*Aug. 2016 – Jun. 2020*

## Research Experience

### Goodwill Lab, Northeastern University, Boston, MA

*Sept. 2023 – Present*

- *Research Assistant*, advised by Prof. Devesh Tiwari
- Designing open-source solutions for constructing sustainable large-scale data centers and HPC systems, and cloud computing systems: heterogeneous hardware execution to optimize performance and energy in HPC.

### Prescience Lab, Northwestern University, Evanston, IL

*Mar. 2022 – Jun. 2023*

- *Research Assistant*, advised by Prof. Peter Dinda
- Ported the Parallel Standard ML language, Maple, to the Nautilus aerokernel and developed serialization and deserialization capabilities within Maple to enable distributed computation.

### PSEC Lab, Northwestern University, Evanston, IL

*Mar. 2022 – Oct. 2022*

- *Research Assistant*, advised by Prof. Yueqi Chen and Prof. Xinyu Xing
- Reproduced 100+ vulnerabilities and analyzed the vulnerable objects in the Linux kernel based on proof-of-concepts (PoC) generated from Syzkaller to evaluate the effectiveness of **HotBPF** [🔗](#).

### Cybersecurity R&D Lab, National University of Singapore, Singapore

*Jul. 2019 – Aug. 2019*

- *Summer Intern*, advised by Prof. Ee-Chien Chang
- Designed two attacking scenarios to exploit vulnerabilities (e.g., CVE-2019-12735, CVE-2019-13272) in Linux and constructed benign and malicious audit log datasets to evaluate the **Watson** [🔗](#) (NDSS 2021).

## Awards

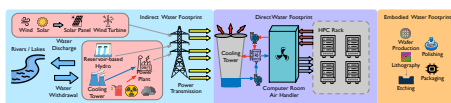
- **ACM PPoPP 2025 Travel Award** 2025
- **IEEE HPEC 2024 Outstanding Paper Award Nomination** 2024
- **MVAPICH User Group (MUG) Conference Travel Award** 2023, 2024, 2025
- **Honorary Graduate of Qian Xuesen College** 2020

## Research Publications

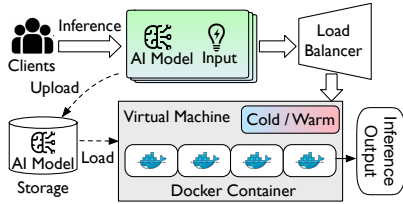
### Water Footprint Modeling, Characterization, and Analysis Toward Water-aware HPC System Design and Operations

**Yankai Jiang**, Rohan Basu Roy, Raghavendra Kanakagiri, Devesh Tiwari

*2025 The 38th IEEE/ACM International Conference for High Performance Computing, Networking, Storage and Analysis (SC 2025)*







## Advancing Serverless Computing for Scalable AI Model Inference: Challenges and Opportunities

Li Wang\*, Yankai Jiang\*, Ningfang Mi

2024 The 10th International Workshop on Serverless Computing (WoSC 2024)

\* indicates equal contribution.

[Paper [🔗](#)] [Slides [🔗](#)] [Bibtex [🔗](#)]

## Open-Source Software Artifacts

- **ForgetMeNot**: <https://doi.org/10.5281/zenodo.15123080> [🔗](#)  
ForgetMeNot is the first open-source tool to quantify the forever chemical compounds during the manufacturing process of computer hardware.
- **WaterWise**: <https://doi.org/10.5281/zenodo.14583915> [🔗](#)  
WaterWise is a novel job scheduler that uses mixed integer linear programming (MILP) to co-optimize both carbon and water footprint. WaterWise leverages delay tolerance, soft constraints, and slack management to exploit opportunities across different geographical locations.
- **EcoLife**: <https://doi.org/10.5281/zenodo.11003259> [🔗](#)  
EcoLife is the first carbon-aware serverless function scheduler, EcoLife, builds on the key insight of intelligently exploiting multi-generation hardware to achieve high performance and lower carbon footprint.
- **Sprout**: <https://github.com/boringlee24/EMNLP24.Sprout> [🔗](#)  
Sprout is a framework that leverages generation directives to guide the autoregressive generation process, achieving a balance between ecological sustainability and high-quality outputs.

## Teaching Experience

**CS340 Introduction to Computer Networks**, Northwestern University  
Peer Mentor, grading homework and hosting office hours.

Evanston, IL  
Winter 2023, Fall 2022

## Talks and Presentations

**SIGMETRICS 2025 Conference**, Stony Brook, NY

June 2025

- Presented: ForgetMeNot: Modeling and Analyzing the Impact of Forever Chemicals in Designing Sustainable Computing Systems.

**PPoPP 2025 Conference**, Las Vegas, NV

March 2025

- Presented: WaterWise: Co-optimizing Carbon- and Water-Footprint Toward Environmentally Sustainable Cloud Computing.

**SC 2024 Conference**, Atlanta, GA

November 2024

- Presented: EcoLife: Carbon-Aware Serverless Function Scheduling for Sustainable Computing

**Green AI Summit**, Cambridge, MA

October 2024

- Presented: Carbon in Motion: Characterizing Open-Sora on the Sustainability of Generative AI for Video Generation.

**HotCarbon 2024 Workshop**, Santa Cruz, CA

July 2024

- Presented: Carbon in Motion: Characterizing Open-Sora on the Sustainability of Generative AI for Video Generation.

## Professional Service

---

- **Conference Artifact Evaluation Committee Membership**  
USENIX Conference on File and Storage Technologies (FAST), 2026.
- **Conference Artifact Evaluation Committee Membership**  
IEEE/ACM International Symposium on Microarchitecture (MICRO), 2025.
- **Conference Artifact Evaluation Committee Membership**  
IEEE International Symposium on Computer Architecture (ISCA), 2025.
- **Conference Review Program Committee (PC) Membership**  
International Joint Conference on Artificial Intelligence (IJCAI) - Demo Track, 2025.
- **Workshop Review Program Committee (PC) Membership**  
ACL Student Research Workshop, 2025.