WENYI WANG

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EDUCATION

The University of Chicago   Chicago, Ill.
Ph.D., Computer Science   Sept. 2022-present
- GPA: 4.0/4.0

Northwestern University   Evanston, Ill.
M.S., Computer Science   Sept. 2019-Mar. 2021
- GPA: 3.91/4.0

University of California, Irvine   Irvine, Calif.
Visiting Student and Research Assistant, Dept. of EECS   Jul.-Sept. 2018
- GPA: 4.0/4.0

Northeastern University   Shenyang, China
B.E. in Software Engineering   Sept. 2015–Jul. 2019
- Major GPA: 3.9/4.0

PUBLICATIONS

- J. Ma, **W. Wang**, A. Neilson, M. Cuevas, B. Homerding, C. Liu, Z. Huang, S. Campanoni, K. Hale, P. Dinda, "Paths to OpenMP in the Kernel," *International Conference for High Performance Computing, Networking, Storage, and Analysis (SC21)*

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SELECTED AWARDS AND HONORS

- **Crerar Fellowship, The University of Chicago (2022)**
- **Exceptional Funding of the Nation (China),** awarded to the top 5%, the 12th National Innovation Training Program for College Students (2018)
- **Gold Award,** China College Students' Entrepreneurship Competition in Liaoning Province (2018)
- **Nationwide Second Prize,** China, "Innovation has a future" University AI Innovation Grand Competition (2018)
- **Second-prize Scholarship,** Northeastern University (Academic Merit, 2018)
- **Third-prize Scholarship,** Northeastern University (Academic Merit, 2016)
- **Third Prize,** Mathematics Competition of Chinese College Students, Liaoning Province (involves one million college students, 2016)

RESEARCH EXPERIENCE

The University of Chicago   Chicago, Ill.
Graduate Student, advised by Professor Yanjing Li   Sept 2022–present.
YLab, The UpDown Project
- Currently working on a brand-new data movement runtime library called UDSHMEM.
- UDSHMEM has already achieved groundbreaking performance on the UpDown system.

The University of Chicago   Chicago, Ill.
Graduate Student, advised by Professor Kyle Chard and Ian Foster   Sept 2022–present.
GlobusLabs, XTask
- Currently exploring extreme fine-grained parallelism leveraging lockless data structures, on OpenMP

Massachusetts Institute of Technology | Chicago, Ill.

Graduate Research Intern for Professor Pattie Maes and Dr. Camilo Rojas | May 2021–June 2022

Media Lab, Project Us

- Led the effort to develop an artificial intelligence emotion recognition system that can provide real-time feedback from the cloud
- Performed advanced work on all layers of the stacks, including front-end and back-end development, pushing the project to the client-ready pilot stage while participating in the MIT delta v program
- Achieved comparable performance by improving and implementing an emotion recognition model, with only half of the training data from the RECOLA paper
- Built a testbed including a complete pipeline for audio preprocessing, voice emotion detection and real-time audio demonstration, and developed an MS Teams App

Carnegie Mellon University | Pittsburgh, Pa

Graduate Research Intern for Professor Min Xu | May 2021–Oct 2022

Xu lab, Saliency Detection for Cryo-Electron Tomography

- Led the research on 3D saliency detection for Cryo-ET by applying attention mechanism and teacher-student model in an unsupervised environment
- Researched and wrote VS Code Remote SSH tutorial for AITom -- contributions can be found here
- Contributed to baseline experiments and paper writing for the lab's new saliency detection project

Northwestern University: | Evanston, Ill.

Graduate Research Assistant for Professor Peter Dinda | Mar. 2020–Aug. 2021

PLab, The Interweaving Project

- Achieved an average performance gain of 22% (geometric mean) across scales and benchmarks for runtime in kernel implementation by inspecting runtime behavior
- Customized LLVM/OpenMP runtime library libomp and implemented pthread-embedded library to make libomp function within Nautilus kernel
- Discovered a Floating-Point logic error in Nautilus codebase by benchmarking Gaussian elimination
- Ported different benchmarks including NAS Parallel Benchmarks

Northeastern University | Shenyang, China

Team Leader under Professor Tao Ren | Nov. 2016–Nov. 2018

Immersive and Intelligent Humanoid Robot Control System

- Led design of the overall structure of the control system, contributing 60% of the project's code on three different platforms with five programming languages
- Designed an algorithm to achieve body movement and gesture recognition based on Kinect and enable the robot to move more naturally and accurately
- Proposed novel ideas for developing the robot's "deduction" abilities in accordance with the environment
- Implemented that idea into a system that can provide hints for searching for objects that are not recognized by the object detection algorithm in the current camera capture frame

ADDITIONAL INFORMATION

Research Interests: Systems for AI, AI for Systems, Parallel Systems, Cloud, Distributed Systems, HPC, Machine Learning

Computer Skills: C, C++, Java, Python, HTML, JavaScript, C#, MATLAB, OpenMP, LLVM, TensorFlow, PyTorch, Flask, JSP, SQL, MongoDB

Extracurricular activities: President of the Foreign Affairs Department, Northeastern University Student Association for Science and Technology