Jianxin (Jason) Sun   Curriculum Vitae

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EDUCATION

- **University of Nebraska-Lincoln**   **May 2024**
  Ph.D. in Computer Science   Lincoln, USA
  Advisor: Hongfeng Yu
- **Purdue University**   **May 2015**
  M.Sc. in Electrical and Computer Engineering.   West Lafayette, USA
  Advisor: Avinash Kak
- **Harbin Institute of Technology**   **June 2008**
  B.Eng in Electronic and Information Engineering   Harbin, China

ACADEMIC EXPERIENCE

- **University of Nebraska-Lincoln, Lincoln, NE**   **Fall 2018-May 2024**
  Research Assistant at Visualization Lab, with Dr. Hongfeng Yu
  - Research on Data Visualization, Computer Graphics, and Deep Learning
- **Argonne National Laboratory, Lemont, IL**   **Summer and Fall 2021**
  Graduate Research Aide Internship at MCS, with Dr. Tom Peterka
  - Research on Scientific Data Modeling and Visualization
- **Purdue University, West Lafayette, IN**   **Fall 2012-Spring 2015**
  Research Assistant at Robot Vision Lab (RVL), with Dr. Avinash Kak
  - Research on Computer Vision, 3D Learning, and Reconstruction

INDUSTRIAL EXPERIENCE

- **Li-cor, Lincoln, NE**   **Fall 2015-Spring 2018**
  Design Software Engineer
  - Work on MCU and Linux SOC, ARM embedded system development, device driver, kernel and user space development in C/C++. Memory hierarchy, interrupts, and memory-mapped IO. Camera interfaces driver and application.

PUBLICATIONS

- Yu Pan, **Jianxin Sun**, Hongfeng Yu, Joe Luck, Geng Bai, Nipuna Chamara, Yufeng Ge, Tala Awada, "Building Multi-Agent Copilot towards Autonomous Agricultural Data Management and Analysis". IEEE Conference on Big Data, 2024, Washington DC, USA
- **Jianxin Sun**, David Lenz, Hongfeng Yu, Tom Peterka, "Adaptive Multi-Resolution Encoding for Interactive Large-Scale Volume Visualization through Functional Approximation". Proceedings of IEEE Symposium on Large Data Analysis and Visualization (LDAV) 2024, St. Pete Beach, FL
- **Jianxin Sun**, Xinyan Xie, Hongfeng Yu, "RmdnCache: Duel Space Prefetching Neural Network for Large-Scale Volume Visualization". IEEE Transactions on Visualization and Computer Graphics, 2024
- **Jianxin Sun**, David Lenz, Hongfeng Yu, Tom Peterka, "Scalable Volume Visualization for Big Scientific Data Modeled by Functional Approximation". IEEE Conference on Big Data, 2023

- **Jianxin Sun**, Xinyan Xie, Yu Pan, Yakub Islamov, Yufeng Ge, and Hongfeng Yu, "Visualization of 3D Hyperspectral Soil Mapping Data via Autoencoder-based Clustering". IEEE Conference on Big Data, 2023
- **Jianxin Sun**, David Lenz, Hongfeng Yu, Tom Peterka, "MFA-DVR: Direct Volume Rendering of MFA Models". Journal of Visualization, 2023
- Yu Shi, Hannah Tang, **Jianxin Sun**, Xinyan Xie, Huijing Du, Dandan Zheng, Chi Zhang, Hongfeng Yu, "Tissue-Specific Color Encoding and GAN Synthesis for Enhanced Medical Image Generation". IEEE Conference on Big Data, 2023
- Jieting Wu, **Jianxin Sun**, Xinyan Xie, Tian Gao, Yu Pan, Hongfeng Yu, "Accelerating Web-based Graph Visualization with Pixel-Based Edge Bundling". IEEE International on Big Data, 2023
- Yu Pan, **Jianxin Sun**, Hongfeng Yu, "LM-DiskANN: Low Memory Footprint in Disk-Native Dynamic Graph-Based ANN Indexing". IEEE Conference on Big Data, 2023
- Yu Pan, **Jianxin Sun**, Hongfeng Yu, Geng Bai, Yufeng Ge, Joe Luck, Tala Awada, "Transforming Agriculture with Intelligent Data Management and Insights". IEEE Conference on Big Data, 2023
- Sujan Shrestha, **Jianxin Sun**, Katja Koehler-Cole, Andrea Basche, Hongfeng Yu, "Empowering Cover Crop Decision Support with Visualization and Provenance Enhancement". IEEE Conference on Big Data, 2023
- Ryan Haggerty; **Jianxin Sun**; Hongfeng Yu; Yusong Li, "Application of Machine Learning in Groundwater Quality Modeling - A Comprehensive Review". Water Research, 2023
- Mohammad M. R. Lunar, **Jianxin Sun**, John Wensowitch, Michael Fay, Halit Bugra Tulay, Sai Suman, Brian Qiu, Deepak Nadig, Garhan Attebury, Hongfeng Yu, Joseph Camp, Can Emre Koksal, Dario Pompili, Byrav Ramamurthy, Morteza Hashemi, Eylem Ekici, Mehmet C. Vuran, "OneLNK: One Link to Rule Them All: Web-based Wireless Experimentation for Multi-vendor Remotely Accessible Indoor/Outdoor Testbeds". ACM WiNTECH, 2021
- Tian Gao, Feiyu Zhu, Puneet Paul, Jaspreet Sandhu, Henry Akrofi Doku, **Jianxin Sun**, Yu Pan, Paul Staswick, Harkamal Walia, Hongfeng Yu, "Novel 3D Imaging Systems for High-Throughput Phenotyping of Plants". Remote Sensing, 2021
- **Jianxin Sun**, Chunxia Wu, Yufeng Ge, Yusong Li, Hongfeng Yu, "Spatial-Temporal Scientific Data Clustering via Deep Convolutional Neural Network". IEEE Conference on Big Data, 2019
- Tian Gao, **Jianxin Sun**, Feiyu Zhu, Henry Akrofi Doku, Yu Pan, Harkamal Walia, Hongfeng Yu, "Plant Event Detection from Time-Varying Point Clouds". IEEE Conference on Big Data, 2019
- Li Zhang, **Jianxin Sun**, Cole Peterson, Bonita Sharif, Hongfeng Yu, "Exploring Eye Tracking Data on Source Code via Dual Space Analysis". Working Conference on Software Visualization (VISSOFT), 2019
- Henry Medeiros, Donghun Kim, **Jianxin Sun**, Hariharan Seshadri, Shayan Ali Akbar, Noha M. Elfiky, Johnny Park, "Modeling Dormant Fruit Trees for Agricultural Automation". Journal of Field Robotics, 2016
- Noha M. Elfiky, Shayan A. Akbar, **Jianxin Sun**, Johnny Park, and Avinash Kak, "Automation of Dormant Pruning in Specialty Crop Production: An Adaptive Framework for Automatic Reconstruction and Modeling of Apple Trees". CVPR Workshop on Perception Beyond the Visual Spectrum (PBVS), 2015
- **Jianxin Sun**, Dalei Wu, Song Ci. "Battery Capacity Footprinting and Optimization Analysis for Wireless Multimedia Communication". IEEE Globecom, 2011
- **Jianxin Sun**, Dalei Wu, Song Ci. " Battery-aware multimedia coding optimization by dynamic frequency scaling". International Conference on Computer Communications and Networks (ICCCN), 2011

- **Jianxin Sun**, Song Ci, Chien Jung-Hung, Park Shi-Hyun, Suh Irene H, Oleynikov Dmitry, and Siu Ka-Shun. "Innovative Effector Design for Simulation Training in Robotic Surgery". International Conference on BioMedical Engineering and Informatics (BMEI), 2010

INVITED TALKS & PRESENTATION

- **Holland Computing Center** **Jun 2024**
  Invited Talk: "Introduction to Running Machine Learning Workflows on HPC"
- **Argonne National Laboratory** **Jun 2024**
  Invited Talk: "Interactive Volume Visualization of Large-scale Scientific Data Modeled by Functional Approximation"
- **Daugherty Water for Food Global Institute (DWFI) Research Forum** **Apr 2024**
  Presentation: "Unveiling Soil Mapping through 3D Hyperspectral Imaging and Visualization"

AWARDS

- AAMAS Conference Scholarship, London, UK   2021
- First Place Data Analytics Competition Supported by Mutual of Omaha   2019
- Chancellor's Fellowship, University of Nebraska-Lincoln   2019
- Graduate Research Assistantship, University of Nebraska-Lincoln   2018-2024
- Graduate Teaching Assistantship, Purdue University   2012-2015
- Excellent Bachelor's Thesis (Awarded to top 1% students)   2008

TEACHING

Instructor
- ECE 20700 - Electronic Measurement Techniques, Purdue University (2012-2015)

SERVICE & OUTREACH

Paper Reviewer
- Journal of Transactions on Visualization and Computer Graphics (TVCG)
- Journal of Big Data Research
- IEEE Visualization Conference (VIS), 2021, 2022, 2023, 2024
- Eurographics/IEEE-VGTC Symposium on Visualization (EuroVis), 2023
- IEEE International Conference on Big Data (IEEE BigData), 2021, 2022
- International Conference on Scientific and Statistical Database Management (SSDBM) 2021

Outreach
- Hour of Code & Tech Fair event at Nebraska Innovation Campus (2019/2022/2023/2024)
- Girls Code Lincoln visiting at visualization lab with hands-on activities (2023)
- The third annual Introduce a Girl to Engineering day (2020)

PRESS COVERAGE

Visualization for Cover Crop: "Cover Crop Biomass Calculator Available for Nebraska"