

# JOEL WOLFRATH

## CURRICULUM VITAE

### Personal Information

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### EDUCATION

Ph.D., Computer Science, University of Minnesota, 2024  
M.S., Statistics, Texas A&M University, 2018  
B.S., Computer Science and Mathematics, Wisconsin Lutheran College, 2015

### PROFESSIONAL EXPERIENCE

Adjunct Mathematics Faculty	Rochester Community and Technical College Rochester MN (2019)
Software Engineer	Amazon Web Services (AWS) Minneapolis, MN (2024-2025)
Software Engineer	IBM Rochester, MN (2015-2024)
Member	American Statistical Association (ASA)
Member	Association for Computing Machinery (ACM)

### AWARDS

Best Poster Award – ACM/IEEE Symposium on Edge Computing (SEC)	2020
IBM Degree Work Study Program Award	2016
IBM Outstanding Technical Achievement Award	2020, 2022

## SERVICE

Peer Reviewer

IEEE TMC (2024 – Present)  
IEEE TNNLS (2023 – Present)

External Reviewer

ACSOS (2020), IISWC (2020), ICDCS (2020, 2023)  
CCGRID (2022, 2023), IEEE Cloud (2024)  
USENIX ATC (2025)

## CONFERENCE PUBLICATIONS

1. **Joel Wolfrath**, Anirudh Achanta, and Abhishek Chandra. *Leveraging Multi-Modal Data for Efficient Edge Inference Serving*, 24th IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGrid). May 2024.
2. **Joel Wolfrath** and Abhishek Chandra. *Plexus: Optimizing Join Approximation for Geo-Distributed Data Analytics*, Proceedings of the 14th ACM Symposium on Cloud Computing (SoCC), Santa Cruz, California, USA, Oct 2023.
3. **Joel Wolfrath** and Abhishek Chandra. *Efficient Transmission and Reconstruction of Dependent Data Streams via Edge Sampling*. Proceedings of the 10th IEEE International Conference on Cloud Engineering (IC2E), Pacific Grove, California, USA, Sep 2022.
4. **Joel Wolfrath**, Nikhil Sreekumar, Dhruv Kumar, Yuanli Wang, and Abhishek Chandra. *HACCS: Heterogeneity-Aware Clustered Client Selection for Accelerated Federated Learning*. Proceedings of the 36th IEEE International Parallel & Distributed Processing Symposium (IPDPS), (Virtual), May-June 2022.

## WORKSHOP PAPERS / POSTERS

1. Dhruv Kumar, **Joel Wolfrath**, Abhishek Chandra and Ramesh Sitaraman. *Towards WAN-Aware Join Sampling over Geo-Distributed Data*. Proceedings of the 5th International Workshop on Edge Systems, Analytics and Networking (EdgeSys 2022), Rennes, France, April 2022.
2. Yuanli Wang, **Joel Wolfrath**, Nikhil Sreekumar, Dhruv Kumar, and Abhishek Chandra. *Accelerated Training via Device Similarity in Federated Learning*. Proceedings of the 4th International Workshop on Edge Systems, Analytics and Networking (EdgeSys 2021), (Virtual), April 2021.

3. **Joel Wolfrath** and Abhishek Chandra. Data-Aware Edge Sampling for Aggregate Query Approximation. Poster in the *Fifth ACM/IEEE Symposium on Edge Computing (SEC)*, (Virtual), November 2020. **Best Poster Award**.

## UNDER REVIEW

1. Nathan Wolfrath, **Joel Wolfrath**, Hengrui Hu, Anjishnu Banerjee, and Anai N Kothari. Stronger Baseline Models—A Key Requirement for Aligning Machine Learning Research with Clinical Utility, 2025. <https://arxiv.org/abs/2409.12116>
2. **Joel Wolfrath**, Daniel Frink, and Abhishek Chandra. SneakPeek: Data-Aware Model Selection and Scheduling for Multi-Application Inference Serving on the Edge, 2025.

## PATENTS

1. **Joel Wolfrath**, et al. Hypervisor having local keystore. US Patent 11,809,568, 2023.

## TECH REPORTS

1. **Joel Wolfrath** and Abhishek Chandra. A Biased Estimator for MinMax Sampling and Distributed Aggregation, 2024. <https://arxiv.org/abs/2404.17690>
2. **Joel Wolfrath** and Abhishek Chandra. Efficient Transmission and Reconstruction of Dependent Data Streams via Edge Sampling, 2022. <https://arxiv.org/abs/2208.06103>