

Joseph Zuber

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PROFILE

Seeking a university program to pursue a PhD in Computer Science with an emphasis on Machine Learning and High-Performance Computing. Will eventually seek full-time employment as a Machine Learning Researcher.

RESEARCH AND TEACHING EXPERIENCE

Distributed Graph Neural Network Research Aug 2023 – Present

Iowa State University, Ames, Iowa

- Primary author of a work currently under review at a major conference
- Performed research as a part of a team under Dr. Ali Jannesari
- Worked closely with hydrology researchers and across multiple universities
- Performed literature reviews and paper presentations

Discrete Mathematics Teaching Assistant Jan 2023 – Present

Iowa State University, Ames, Iowa

- Received Graduate Teaching Excellence Award in May 2024
- Taught recitation
- Taught lecture when professor is absent
- Held office hours
- Graded homework, quizzes, and exams

Honors Capstone Research Project Jan 2023 – May 2023

Iowa State University, Ames, Iowa

- Developed a simple application in Python which converts Livox LiDAR files from the .lvx format to other more common point cloud formats
- Created and trained a convolutional neural network using Python and Tensorflow to detect the number of people sitting around a table

RECENT PROFESSIONAL HISTORY

Software Engineering Aviation Intern May 2023 – Aug 2023

Garmin, Olathe, Kansas

- Wrote module tests for safety critical applications
- Extensive writing, modification, and testing of C code

Software Engineering Intern May 2022 – Aug 2022

Open Systems International, Medina, Minnesota

- Developed custom applications based on customer requirements in both C and Python
- Wrote a fast, safety critical C program which is now used as a general product the company offers

EDUCATION

MS, Computer Engineering at Iowa State University (GPA: 3.93/4.0) **Expected December 2024**

BS, Computer Engineering at Iowa State University (GPA: 3.89/4.0) **With Honors May 2023**

PUBLICATIONS

Frohwein, Thomas, Zachary Garwood, Dylan Hampton, Kevin Knack, Nate Schenck, Britney Yu, Joe Zuber, Goce Trajcevski, Xu Teng, and Andreas Züfle (2023). “RouteDOC: Routing with Distance, Origin and Category Constraints (Demonstration Paper)”. In: *Proceedings of the 18th International Symposium on Spatial and Temporal Data*. SSTD '23. Calgary, AB, Canada: Association for Computing Machinery, pp. 185–188. ISBN: 9798400708992. DOI: [10.1145/3609956.3609977](https://doi.org/10.1145/3609956.3609977). URL: <https://doi.org/10.1145/3609956.3609977>.

Zuber, J., A. M. Nazar, A. Gaffar, and M. Y. Selim (Oct. 2023). “Enhancing Team Attendance Tracking in TBL Classes: A Comparative Study of LiDAR and Camera-Based Systems”. In: *2023 IEEE Frontiers in Education Conference (FIE)*. Los Alamitos, CA, USA: IEEE Computer Society, pp. 1–7. DOI: [10.1109/FIE58773.2023.10343255](https://doi.ieeecomputersociety.org/10.1109/FIE58773.2023.10343255). URL: <https://doi.ieeecomputersociety.org/10.1109/FIE58773.2023.10343255>.

HONORS AND AWARDS

Graduate Teaching Excellence Award	May 2024
Iowa State Honors Program Graduate	May 2023
Engineering Senator in ISU Student Government	May 2022 – Jan 2023

MEMBERSHIPS

Association for Computing Machinery

SKILLS

Programming Languages	C, Python, Java, LaTeX
Frameworks and Libraries	PyTorch, TensorFlow, DGL, OpenCV, OpenMP, MPI, Flask
Software	Git, Overleaf, Visual Studio, FFmpeg