Evan Gossling

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Education

Doctor of Philosophy (Ph.D.) in Computer Engineering 2023 – Present
Iowa State University of Science and Technology GPA: 4.00/4.00

Bachelor of Science (B.S.) in Computer Engineering 2019 – 2023
Iowa State University of Science and Technology GPA: 3.85/4.00

Experience

Graduate Research Assistant, Iowa State University – Ames, IA Aug. 2023 – Present

- ❖ Currently researching transport layer solutions to enable low-latency and broadband-demanding applications in rural 5G environments under Dr. Hongwei Zhang
- ❖ Includes multipath QUIC (MPQUIC) algorithmic and protocol research to enable a high performance multipath transport solution
- ❖ Includes incorporating RaptorQ codes into a multipath transport solution to enable guaranteed packet delivery under dynamic and lossy wireless environments
- ❖ Completed contracted research for Collins Aerospace to investigate and develop a multipath packet scheduling algorithm (in MPQUIC) to support efficient multipath bandwidth aggregation in lossy wireless environments
- ❖ Working with BitRipple, Inc. and Boston University researchers to investigate an end-to-end framework that utilizes RaptorQ codes to support real-time, low-latency, and high broadband-demanding applications in rural wireless environments

Undergraduate Research Assistant, Iowa State University – Ames, IA Sep. 2022 – Aug. 2023

- ❖ Researched networking for 5G and beyond networks under Dr. Hongwei Zhang with the WiCi Center and $16 million ARA PAWR Platform
- ❖ Worked with a diverse team to set up the ARA Platform enabling the research and development of wireless technologies
- ❖ Personally responsible for deploying Power Distribution Units (PDUs) at 5G base stations as well as developing remote monitoring and management software
- ❖ Developed and deployed a containerized and centralized API and database to (1) remotely monitor PDU's status and power draw, (2) enable remote control of the PDUs to manage efficiency and power usage, and (3) collect and store data in real-time in a central (MariaDB) database

App Dev Intern, RSM US LLP – Des Moines, IA Jun. 2022 – Aug. 2022

- ❖ Worked in the consulting division at a top tax/audit/consulting firm to develop internal client software
- ❖ Used object-oriented programming to write high performing scripts to fulfill client's needs, including reducing legacy script loading time
- ❖ Demoed scripts for clients and listened for feedback to make necessary changes

Undergraduate Research Assistant, Iowa State University – Ames, IA Jan. 2020 – Jan. 2022

- ❖ Researched geometric computing for smart urban and rural environments under Dr. Goce Trajcevski
- ❖ Worked with a diverse team to create a web application displaying the impact of compression on evolving Triangulated Irregular Networks
- ❖ Responsible for developing the front-end of an application using HTML, JavaScript, jQuery, Ajax, and D3.js
- ❖ Web development using Flask and Django frameworks and a PSQL backend

Skills

Languages: Rust, Java, Python, C

Web Development/Frameworks: Flask, HTML, JavaScript, CSS, jQuery

Technologies/OS: Git, Linux

Hypervisors/Containerization: Docker, VMware, VirtualBox

Awards & Honors

❖ National Science Foundation Graduate Research Fellowship (**NSF GRFP**)	Apr. 2024
❖ Glenn W. and Cordelia R. Sellers Graduate Scholarship	Aug. 2023
❖ Iowa State University Honors Program	Aug. 2019 - Jan. 2023

❖ Best Paper Honorable Mention, IEEE Future Networks World Forum (FNWF), 2023

❖ Best Paper Award, 17th ACM Workshop on Wireless Network Testbeds, Experimental evaluation and CHaracterization (WiNTECH), 2023

Organizations

❖ IEEE-Eta Kappa Nu	Inducted Apr. 2021
◆ President - Nu Chapter	Aug. 2022 - Present
◆ Vice President - Nu Chapter	Aug. 2021 - Aug. 2022
❖ IEEE (Student Member)	Apr. 2021 - Present
❖ ACM (Professional Member)	Dec. 2023 - Present
❖ Tau Beta Pi (Member)	Inducted Apr. 2021

Publications

Conferences

❖ E. K. A. Permatasari, E. Gossling, M. Nadim, S. Babu, D. Qiao, H. Zhang, M. Luby, J. W. Byers, L. Minder, and P. Aggrawal. 2024. Real-Time Liquid Wireless Transport for Video Streaming in Rural and Agricultural Applications. In Proceedings of the 3rd Mile-High Video Conference (MHV '24).

❖ **(Best Paper Honorable Mention)** Tianyi Zhang, Guoying Zu, Taimoor Ul Islam, Evan Gossling, Sarath Babu, Daji Qiao, and Hongwei Zhang. Exploring Wireless Channels in Rural Areas: A Comprehensive Measurement Study. 2023 IEEE Future Networks World Forum (FNWF '23).

❖ **(Best Paper Award)** Taimoor Ul Islam, Tianyi Zhang, Joshua Ofori Boateng, Evan Gossling, Guoying Zu, Sarath Babu, Hongwei Zhang, and Daji Qiao. 2023. AraMIMO: Programmable TVWS mMIMO Living Lab for Rural Wireless. In Proceedings of the 17th ACM Workshop on Wireless Network Testbeds, Experimental evaluation & Characterization (WiNTECH '23).

Demos | Posters

❖ Evan Gossling, Elisabeth Permatasari, Md Nadim, Sarath Babu, Daji Qiao, Hongwei Zhang, Mike Luby, Lorenz Minder, Pooja Aggrawal, and John Byers. 2024. Real-Time Liquid Wireless Networking for Data-Intensive Rural Applications (Poster). 2024 Farm Progress Show, AraFest 2024.

❖ Mike Luby, Elisabeth Permatasari, and Evan Gossling. 2023. Real-Time Liquid Wireless Networking for Data Applications (Demo). 2023 ARA Public Launch.

❖ Ce Li, Will Postler, Ian Johnson, Paul Brinkmann, Evan Gossling, Bailey Gorlewski, and Goce Trajcevski. 2023. Geo-Awareness of Learnt Citations Prediction for Scientific Publications (Demo Paper). In Proceedings of the 7th ACM SIGSPATIAL Workshop on Location-based Recommendations, Geosocial Networks and Geoadvertising (LocalRec '23).

❖ Prabin Giri, Hooman Hashemi, Evan Gossling, Jason T Guo, Koshal P Shah, and Goce Trajcevski. 2020. CET-LATS: Compressing Evolution of TINs from Location Aware Time Series (Demo Paper). In Proceedings of the 28th International Conference on Advances in Geographic Information Systems (SIGSPATIAL '20).