# Wenjun(Richard) Yang

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## EDUCATION

**University of Washington** Mar 2021 - Dec 2025
Computer Science Doctor Tacoma, WA

- Current GPA 3.95/4.0
- Graduates Merit Scholarship (2022, 2023)
- 2024 Carwein-Andrews Award
- Research Area: Internet of Things, Distributed Systems, Differential Privacy

**University of Washington** Aug 2018 - Nov 2019
Computer Science and Systems Master of Science, Tacoma, WA

- GPA 3.72/4.0
- Graduates Merit Scholarship (2019)
- Core courses: Information retrieval and web search, Web service, Internet of things, Applied distributed system

**Xi'an Jiaotong University** Sep 2014 - Jun 2018
Automation Bachelor of Engineering, Xi'an, China

- GPA: 3.4/ 4.3
- Undergraduate Scholarship (2014, 2016), Excellent Undergraduate Award (2014), Undergraduate Leader Award (2015)

## RESEARCH PROJECT

**CorrelaPriv: Advanced Differential Privacy Framework for Correlated Data** Sep 2022 - Present
Independent Work Tacoma, WA

- This research work proposes a novel approach that integrates differential privacy into IoT data. This methodology diverges from conventional privacy approaches by distributing the process and employing edge computing to promptly safeguard data privacy at its origin.
- The objective of our suggested methodology is to implement differential privacy in networked datasets while also normalizing the data to maintain privacy standards without compromising its use.
- We will apply Laplace mechanism in our differential privacy-preserving models to inject controlled randomness into data outputs, ensuring statistical privacy guarantees. Its symmetric and heavy-tailed distribution allows for a fine balance between privacy protection and data utility, making it a commonly utilized mechanism in privacy-preserving algorithms.

**StreetSmarter - A Navigation based Smart Parking System** Apr 2019 - Jun 2019
Group Leader Tacoma, WA

- This project won the 1st prize on 2019 University of Washington Tacoma annual Hackathon sponsored and judged by Microsoft. Project URL: https://github.com/me38033827/Smart-Parking-System.git
- This project is a smart parking management system which is able to provide navigation to the nearest available parking spot for users so that it can reduce the parking time and therefore help to save energy. The raspberry pi, several kinds of sensors and IBM Watson cloud server are used as the hardware and cloud server of this project.
- I implemented the back-end development through Python Flask framework and create database on SQLite. I also configured the IBM Watson cloud server for the project. (Python)

**Assessing Data Quality for Internet of Things (IoT) Systems** Feb 2019 - Dec 2019
Independent Work Tacoma, WA

- For my master capstone project, this project presents a new data quality model that is capable of identifying abnormalities in sensor data readings using an Artificial Neural Network.
- I build an efficient ANN model based on edge computing can detect abnormal data based on the identified attributes and use this information to potentially correct any errors prior to faults that may occur within an IoT system.
- I also evaluate the performance of the ANN model within different parameters. Then compare the ANN model with other existing traditional models. (MATLAB)

**Comparison and Analysis of Hi-C Data Standardization Methods** Apr 2018 - May 2018
Independent Work Xi'an, China

- For my undergraduate thesis, I compared and analyzed Hi-C data sets in R language and environment, investigated several Hi-C data standardization methods and proposed guidelines on what method to use under different situations. (R)

## PROFESSIONAL EXPERIENCE

**Neusoft Corporation** Jul 2018 - Aug 2018
Software Engineer Intern Shenyang, China

- Neusoft is one of the top-ranking, leading IT solution and service providers in China
- Contributed to a government procurement system. Designed and created the database; Performed data cleaning; Established a data storage structure; Participated in front-end development. (C++, JavaScript)

## PUBLICATIONS

- **W.Yang**, E.Al-Masri and O.Kotevska, "MIC-DP: Leveraging Mutual Information Coefficient for Correlated Differential Privacy Framework", under peer review on IEEE Transactions on Privacy.
- **W.Yang**, and E.Al-Masri, Democratizing Differential Privacy: A Participatory AI Framework for Public Decision-Making, 2025 ACM CHI Workshop Emerging Practices in Participatory AI Design in Public Sector Innovation, https://arxiv.org/abs/2504.21297
- **W.Yang**, and E.Al-Masri, "ULDP: A User-Centric Local Differential Privacy Optimization Method." In 2024 IEEE World AI IoT Congress (AIIoT), pp. 0316-0322. IEEE, 2024.
- E.Al-Masri, A.Souri, H.Mohamed, **W.Yang**, J.Olmsted, O.Kotevska, Energy-efficient cooperative resource allocation and task scheduling for Internet of Things environments, Internet of Things, Volume 23, 2023, 100832, ISSN 2542-6605, https://doi.org/10.1016/j.iot.2023.100832.
- X.Han, Z.Wang, **W.Yang**. *"High-Definition Video Image Mosaics in Real-Time Based on Adaptive H-SIFT"* 2017 6th International Conference Measurement, Instrumentation and Automation (ICMIA 2017). Atlantis Press, 2017.