

## Jeffrey Chen

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### EDUCATION

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B.S. Computer Science University of Texas at Austin Graduation: May 2026

### HONORS

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- **Regeneron Science Talent Search Scholars 2022**
  - Top 300 finalist in the national research competition by the Society for Science

### RESEARCH EXPERIENCE

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- **Research Assistant (NSF CNS-2029569) AI Networking and Security Lab** 05/2020 – 08/2023
  - Developed a privacy-preserving federated machine learning framework to model the COVID-19 pandemic's spread and created fine-grained vulnerability maps
  - Proposed and designed an adaptive worker selection algorithm to improve model accuracy with limited and imbalanced data
  - Implemented a differential privacy scheme while maintaining model accuracy
  - Developed a crowdsourcing mobile app for users to anonymously share COVID-19 symptoms
  - Utilized Google Firebase to manage user data and interactions on the client side, and implemented a Google BigQuery data warehouse to analyze collected data and identify trends and patterns
  - Published and presented first-author papers in *IEEE International Conference on Communications and IEEE Internet of Things, Ad Hoc and Sensor Network Technical Committee Newsletter*, contributed to NSF annual report and system demonstration

### TEACHING EXPERIENCE

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- **Teaching Assistant CS 330E (Software Engineering) and CS 311 (Discrete Math)** 08/2024 – Present
  - Supported 150 students on software engineering projects
  - Led weekly discussion sessions, graded assignments and exams, and provided individualized support during office hours

### PUBLICATIONS

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- **Jeffrey Chen**, R. Chen, X. Zhang, L. Li, Y. Gong, Y. Guo, L. Ni, and M. Pan, "Location Privacy-Preserving COVID-19 Symptom Map Construction via Mobile Crowdsourcing for Proactive Constrained Resource Allocation," *IEEE Internet of Things, Ad Hoc and Sensor Network Technical Committee Newsletter*, No. 13, 2022.
- **Jeffrey Chen**, R. Chen, X. Zhang, and M. Pan, "A Privacy-Preserving Federated Learning Framework for COVID-19 Vulnerability Map Construction," *IEEE Int. Conf. on Communications*, June 14-23, 2021.
- **Jeffrey Chen**, R. Chen, X. Zhang, and M. Pan, "An Ensemble Machine Learning Framework for COVID-19 Vulnerability Map Construction via Privacy Preserving Crowdsourcing," *International Conference on Digital Healthcare and Technology*, London, May 24-25, 2021.
- R. Chen, L. Li, **Jeffrey Chen**, R. Hou, Y. Guo, and M. Pan, "COVID-19 Vulnerability Map Construction via Location Privacy Preserving Mobile Crowdsourcing," *IEEE Global Comm. Conf.* Dec. 7-11, 2020.

### TECHNICAL SKILLS

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**Programming languages:** Java, Python, C, C++, Swift, HTML/CSS, ARM Assembly, Clojure

**Software tools:** Visual Studio Code, Google Cloud BigQuery/CodeLabs/Firebase, GCP, AWS, Azure, MySQL, PostgreSQL, MongoDB, Cassandra DB, Matlab, Android Studio, Xcode, TensorFlow, PyTorch, Scikit-learn