

# Yixuan Gao - CV

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PhD Candidate in Computer Science, Cornell Tech  
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## Academic Affiliations

**Cornell Tech, NYC, USA** 2019 - present  
PhD Candidate in Computer Science, Advisor: Rajalakshmi Nandakumar

## Education

**Cornell Tech, USA** 2019 - Spring 2026 (expected)  
Ph.D. in Computer Science (GPA: 4.0/4.0)  
Advisor: Rajalakshmi Nandakumar  
Committee: Tanzeem Choudhury, Deborah Estrin

**University of Waterloo, Canada** 2014 - 2019  
B.Math. in Computer Science (GPA: 3.72/4.0)  
Dean's Honours List, President's Scholarship

## Publication

- [9] Adnan Armouti, **Yixuan Gao**, Rajalakshmi Nandakumar. *mmIR: Frequency-Space Inverse Rendering for 3D Millimeter-Wave FMCW Radar* **Under Submission in CVPR 2026**
- [8] **Yixuan Gao\***, Tanvir Ahmed\*, Thijs Roumen, Rajalakshmi Nandakumar. *PrivyWave: Privacy-Aware Wireless Sensing of Heartbeat* **Under Submission in UbiComp 2026**
- [7] **Yixuan Gao**, Tanvir Ahmed, Shuang He, Zhongqi Cheng, Rajalakshmi Nandakumar. *SoilSound: Smartphone-based Soil Moisture Estimation*. **Under Submission in UbiComp 2026**
- [6] Bo Liu, **Yixuan Gao**, Yin Li, Rajalakshmi Nandakumar, Thijs Roumen. *Assembly Stethoscope: Detecting Assembly Errors through Frequency Sweeping-A Feasibility Study*. **IASA 2025**
- [5] Zekun Chang, **Yixuan Gao**, Yuta Noma, Shuo Feng, Xinyi Yang, Kazuhiro Shinoda, Tung D Ta, Koji Yatani, Tomoyuki Yokota, Takao Someya, Yoshihiro Kawahara, Thijs Roumen. *OriStitch: A Machine Embroidery Workflow to Turn Existing Fabrics into Self-Folding 3D Textiles*. **SCF 2025**
- [4] **Yixuan Gao\***, Tanvir Ahmed\*, Zekun Chang, Thijs Roumen, Rajalakshmi Nandakumar. *Vital-Hide: Enabling Privacy-Aware Wireless Sensing of Vital Signs*. **HotMobile 2025**

[3] **Yixuan Gao**, Tanvir Ahmed, Mikhail Mohammed, Zhongqi Cheng, Rajalakshmi Nandakumar. *Feasibility of Radio Frequency Based Wireless Sensing of Lead Contamination in Soil*. **EWSN 2024 Best Paper Award**

[2] Alexander T Adams, Ilan Mandel, **Yixuan Gao**, Bryan W Heckman, Rajalakshmi Nandakumar, Tanzeem Choudhury. *Equity-Driven Sensing System for Measuring Skin Tone-Calibrated Peripheral Blood Oxygen Saturation (OptoBeat): Development, Design, and Evaluation Study*. **JMIR Biomed Eng. 2022**

[1] **Yixuan Gao**, Ali Abedi, Tim Brecht, Ramya Bhagavatula. *Analyzing Bitrates in Modern Wi-Fi Networks*. **MobiCom 2018 (Poster)**

\* equal contribution

## Invited Talks

[1] **Digital Life Initiative(DLI) Seminar**: "Seeing Without Seeing: Privacy Challenges in Innovations of Wireless Sensing", Sep 2025

[2] **Joan and Irwin Jacobs Technion-Cornell Institute Steering Committee**: "Building the Next Generation of Wireless and Mobile Sensing Systems for Societal Impact", Jun 2025

## Academic Community Service

Program Committee Member: **IUI** (2025,2026), **ICMI** 2024

Reviewer: **CHI** (2024-2026), **HRI** (2025), **TEI** (2025), **AutomotiveUI** (2024-2025), **CSCW** (2024), **DIS** (2024-2025), **ICIS** (2024), **SUI** (2024), **UbiComp/ISWC** (2024), **CogSci** (2025), **Creativity & Cognition** (2025), **IMX** (2025), **UIST** (2025), **ICWSM** (2025), **JMIR**

50+ reviews completed

## Teaching

Teaching Assistant at Cornell University

[5] **CS5304** Data Science in the Wild, Spring 2021, 2022

[4] **INFO5600** AI in Healthcare, Fall 2021, 2022, 2025

[3] **INFO6310** Behavioral Science, Fall 2020

[2] **CS4700/5700** Artificial Intelligence, Spring 2020

[1] **CS4320/5320** Database Systems, Fall 2019

## Work History

**Research Assistant, Cornell University** 2019-present  
deploying AI-driven wireless sensing systems, and developing anti-sensing technologies

**Research Assistant, University of Waterloo** 2017-2018  
characterizing 802.11n Wi-Fi network and developing learning-based rate adaptation algorithms

<b>Software Developer, OpenText</b>	2017
SFTP server development, REST API implementation, automated testing	
<b>Software Developer, Moody's Analytics</b>	2016-2017
AXIS software suite feature implementation and optimization	
<b>Actuarial Intern, Manulife</b>	2015
Actuarial model calculations and validations	

## Skills

- Programming Languages:** Python, C++, Java, JavaScript, MATLAB, R, Shell Scripting
- Machine Learning & AI:** TensorFlow, PyTorch, Scikit-learn, Keras, OpenCV, NumPy, Pandas, Matplotlib, Seaborn
- Wireless & RF Systems:** GNU Radio, USRP, Software Defined Radio, FMCW Radar, Wi-Fi 802.11 protocols, Bluetooth LE, LoRaWAN, Zigbee
- Signal Processing:** FFT, Wavelet Transform, Digital Filters, Time-Frequency Analysis, Acoustic Processing, Doppler Analysis
- Hardware & Embedded:** Arduino, Raspberry Pi, ESP32, Sensor Integration, Spectrum Analyzer
- Development Tools:** Git, Docker, VS Code, Android Studio, Xcode, Unity
- Databases & Cloud:** MySQL, PostgreSQL, MongoDB, AWS, Google Cloud Platform, Firebase
- Web Technologies:** React, Node.js, Flask, Django, HTML/CSS, REST APIs, GraphQL
- Data Analysis:** Jupyter, R Studio, SPSS, Excel, Tableau, Power BI, Statistical Testing
- Financial/Actuary:** ASA (Associate of the Society of Actuaries): P (Probability), FM (Financial Mathematics), MFE (Models for Financial Economics)