# Wenwen Zhang

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## Education

**MASc in Electronic Engineering and Computer Science** ***08/2020-CURRENT***
The University of British Columbia (UBC), Canada
**Visiting Graduate Researcher (Friedman Scholar) in EECS** ***09/2022-CURRENT***
The University of California, Berkeley (UCB), US
**BSc in Electronic Engineering** ***08/2016-07/2020***
Tianjin University (TJU), China

- ***GPA: 3.88/4.0 | GRE:326 (V:158/170 Q:168/170 AW:4)***

## Publications and Patents

- A. Tashakori*, **W. Zhang***, Z. Wang, and P. Servati, SemiPFL: Personalized Semi-Supervised Federated Learning Framework for Embedded Intelligence, *IEEE Internet of Things Journal*. doi: 10.1109/JIOT.2022.3233599.
- **W. Zhang**, K. Ma*, H. Zhang and H. Fu, Design of a Compact SISL BPF With SEMCP for 5G Sub-6 GHz Bands, *IEEE Microwave and Wireless Components Letters*, vol. 30, no. 12, pp. 1121-1124, Dec. 2020, doi: 10.1109/LMWC.2020.3030189.
- H Zhang, K Ma*, **W. Zhang**, et al. A Novel Self-packaged DBBPF with multiple TZs for 5G sub-6GHz applications. *Microw Opt Technol Lett*. 2022, 0895-2477, doi: 10.1002/mop.33455.
- **W. Zhang***, A Tashakori, Z Jiang, A Servati, C Kuo, and P Servati*, A Flexible Sensor System for Lower Body Locomotion Estimation. *IEEE Transactions on Biomedical Engineering (In progress).*
- **W. Zhang***, C Kuo and P Servati*, A Wearable Sensor System for Measuring Pathological Gait Parameters. *IEEE Transactions on Biomedical Engineering (In progress)*
- J Wang*, **W. Zhang***, C Silva, and L Sigal. Make Unsupervised Clustering Discriminative and Informative for Source-Free Domain Adaptation: A Feature Graph Guided Contrastive Learning Method *(In progress for 2023 ICML)*.
- K Ma, H Zhang*, H Fu, **W. Zhang**. 5G dual passband filter based on dielectric integrated suspension line. CN 201910528184.
- K Ma, **W. Zhang***, H Fu, H Zhang. Band-pass filter based on 5G double-frequency dielectric integrated suspension lines. CN 201910862414.
- **W. Zhang***, J. Wang, L. Chrostowski, N Jaeger and P. Servati. Weight Bank Addition Photonic Accelerator for Artificial Intelligence. *Optics Express* (*under review*).
- **W. Zhang***, H. Zhang, L. Chrostowski, N Jaeger and P. Servati. Ring resonator sensor based on Vernier Effect. *Optics Express* (*under review)*

## Conferences and Presentations

- **W. Zhang***, Arvin Tashakori, Zenan Jiang, Amir Servati, Calvin Kuo, and Peyman Servati, A Flexible Sensor System for Lower Body Locomotion Estimation. *Poster - 2022 Biomedical Engineering Society Annual Meeting.* (Link).
- **W. Zhang***, C Kuo and P Servati, A Wearable Sensor System for Measuring Pathological Gait Parameters. *Poster - 2022 Biomedical Engineering Society Annual Meeting*. (Link).

- **W. Zhang***, H Zhang, Probing Ring Resonator Sensor Based on Vernier Effect. *Poster – submitted to the 2023 IEEE Silicon Photonics Conference*.

## Awards and Honors

- UBC Friedman Award for Scholars in Health (First female awardee in ECE: My page) *2022*
- UBC Faculty of Applied Science Graduate Award *2022*
- UBC International Tuition Award *2020-2021*
- UBC Research Assistance Graduate Award *2020-2021*
- China College Students Integrated Circuit Competition (the north region), (Top 1 of 140) *2019*
- China College Students Integrated Circuit Competition (Final), Second Prize (1%) *2019*
- USRP Excellent Project Award of Province (Top 1% in Engineering department) *2018*
- First Prize in China Mathematical Contest in Modeling (5% - Tianjin area). *2018*
- "Merit Student" Scholarship of Tianjin University *2017-2018*
- Career Certification of HCNA Huawei *2018*
- "Mathematical Contest in Modeling Certificate of Achievement (MCM)", Honorable Mention *2017*

## Projects

- ***Ti Lab*** **Supervisor: Prof. Grigory Tikhomirov**

  **Electronic Engineering and Computer Science Department, Graduate Scholar**

  Optics-free DNA Microscopy Imaging by Machine Learning *09/2022-04/2023*
  - Post-processing cell chemical reaction bio-information and locating molecule relative position through spectral maximum likelihood estimation via using machine learning. (Python)
- ***Flexible Electronics and Energy Lab (FEEL)*** **Supervisor: Prof. Peyman Servati**

  **Electronic and Computer Engineering Department, Research Assistant**

  Personalized Semi-supervised Federated Learning for Embedded Intelligence *09/2021-01/2022*
  - The Federated learning method considers a large proportion of no-label data with huge data heterogeneity at the different device ends.

  Wearable Sensor System for Gait Disorder Patients *01/2022-09/2022*
  - Developing real-time algorithms to predict gait parameters of patients with disorders (Parkinson, stroke & geriatric).

  Teaching Assistant for CPEN 211Computing Systems (instructor: Prof. Tor Aamodt)

  Teaching Assistant for ELEC 315 Electronic Materials and Devices (instructor: Prof. Peyman Servati)
- ***Texavie Technologies, Inc.***

  **R&D Intern, Hardware/Firmware and Data Processing** *12/2021-06/2022*

  Smart Knee Sleeves Based on Flexible Sensors *12/2021-06/2022*
  - Lower extremity estimation & movement tracking & muscle condition monitoring by data from flexible sensors (stress, temperature, etc.) integrated into knee braces.

  Intelligent Glove with Embedded Wearable Sensors. *12/2021-03/2022*
  - Hand gesture reconstruction of post-stroke patients to assess upper extremity function and help motivate recovery progress.
- ***Human Motion Biomechanics Lab (HuMBL)*** **Co-Supervisor: Prof. Calvin Kuo**

  **Biomedical Engineering Department, Research Assistant**

  Real-World Biomechanical Measurements of Impacts on Humans *12/2021-01/2022*
  - Quantifying measurement errors in wearable inertial measurement unit devices caused by soft tissue movement artifacts.

  Auto-calibration of Multi-sensors *01/2021-06/2021*

- Automatic calibration of relative sensor location and orientation movement during slow motions.

- ***Microsystems and Nanotechnology (MiNa) Lab*** **Instructor: Prof. Lukas Chrostowski**
  **Electronic and Computer Engineering Department**
  Weight Bank Addition Photonic Accelerator in Neuromorphic Networks *04/2021-12/2021*
  - Designing and implementing cascaded micro-ring weight bank reporting the observations of weight addition and subtraction in neuromorphic networks based on silicon on insulators (SOI). – Course project

  Extended FSR Micro-Ring Modulator – Course project *09/2020-05/2021*
  - Designing parallel and cascaded ring resonators exhibiting the Vernier effect and extended free spectral range (FSR).
- ***Interconnection Perception Microelectronics Laboratory, Tianjin University*** **Supervisor: Prof. Kaixue Ma**
  **Electronic and Computer Engineering Department, Research Assistant**
  Dual-band Microwave Filters for 5G Sub-6GHz Base-station *09/2018-04/2020*
  - Design a self-packaged dual bandpass filter with improved suppression for 5G sub-6 GHz applications based on the substrate integrated suspended line technology.
- ***High-Performance Computing Lab, Tianjin University*** **Supervisor: Prof. Shanjiang Tang**
  **Department of Intelligent Computer Science, Research Assistant**
  APAC HPC-AI Competition (Singapore) *08/2018-09/2018*
  - Refining performance of RDMA based on TensorFlow by python.
- ***Machine Learning and Biomedical Development Laboratory, Tianjin University*** **Supervisor: Prof. Ran Su**
  **Intelligence and Computing Department, Research Student**
  Feature Extraction of Brain Tumor and Classification *2017-2018*
- ***Electronic Information Engineering Department, Tianjin University*** **Supervisor: Prof. Jingyu Yang**
  **Undergraduate Student, Research Student**
  Wireless Calculator for Communication Composed of Sampling, Coding, Modulation, Demodulation, Detection of Acoustic Signal *2017*

## Workshop & Seminar

- 2022 Stanford AI + Health online conference
- 2022 Machine Learning for Health (ML4H)
- 2022 Biomedical Engineering Society Annual Meeting
- 2021 SIEPIC Active Silicon Photonics
- The SmarT Innovations for Technology Connected Health (STITCH)
- QSciTech-QuantumBC Virtual Workshop: Gate-based Quantum Computing Using IBM-Q
- 2020 SIEPIC Passive Silicon Photonics
- 2019/2020 International Workshop on Microwave and Microsystems

## Community Service

- ACM/BMES/IEEE/Optica student member
- IEEE Women in Engineering member *2019-CURRENT*
- IEEE MWCL, TCAS-II, MOTL, Journal of IoT (volunteer as a reviewer)

## Skills

- Python, MATLAB, C, C++, Swift, PHP, Lumerical, Ansys, HFSS, Unity, Linux, Git.