Qi Shutong

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EDUCATION BACKGROUND

University of Toronto (UofT) **Toronto, Canada**
Ph.D. Student, Electrical and Computer Engineering *Sept.2020 - Now*
Skills: Machine Learning, COMSOL, FDTD, FDFD, Python

Beihang University (BUAA) **Beijing, China**
B.Eng., Electronic and Information Engineering *Sept.2016 - Jun.2020*
Excellent Graduate

RESEARCH EXPERIENCE

University of Toronto, Department of Electrical and Computer Engineering **Toronto, Canada**
***Research Assistant**, Advised by Professor Costas D. Sarris* *Sep.2020 - Now*

- Proposed a deep neural network to compensate for the numerical dispersion error in the Finite-Difference Time-Domain (FD-TD) method.
- Proposed a deep neural network to simulate the planar microwave circuits directly based on their layouts.

Beihang University, Department of Electronic and Information Engineering **Beijing, China**
***Research Assistant**, Advised by Associate Research Fellow Qiang Ren* *Sep.2018 - Jun.2020*

- Applied Finite-Difference Frequency-Domain (FD-FD) method to simulate scattering EM problems.
- Proposed a deep neural network (U-net) to accelerate the FD-FD method for 2-D and 3-D EM scattering problems.

Dartmouth College, Department of Computer Science **Hanover, USA**
***Research Assistant**, Advised by Assistant Professor Xing-dong Yang* *Jun.2019 - Sep.2019*

- Simulated the radiation pattern of the transmitter and the receiver antennas to obtain the best performance for communication.
- Designed and tested how different cloth affects the radiation performance of the antennas.

Colorado School of Mines, Department of Computer Science **Golden, USA**
***Research Assistant**, Advised by Associate Professor Hao Zhang* *Jul.2018 - Sep.2018*

- Programed to complete the collection of experimental data and data processing.
- Supported the autonomous driving module and assisted in debugging the robot.

Teaching Experience

University of Toronto **Toronto, Canada**
Teaching Assistant *Sep. 2021 - Dec.2022*

- ECE 320 *Fields and Waves*
- ECE 221 *Electric and Magnetic Fields*

PUBLICATIONS

- **Shutong Qi** and Costas Sarris, "Deep Neural Networks for Rapid Simulation of Planar Microwave Circuits Based on their Layouts," in *IEEE Transactions on Microwave Theory and Techniques,* 2022, doi: 10.1109/TMTT.2022.3210229.

- **Shutong Qi** and Costas Sarris, "Numerical Dispersion Compensation for FDTD via Deep Learnings," in *2022 IEEE International Symposium on Antennas and Propagation and USNC/URSI Radio Science Meeting*, July 10-15, 2022, Denver, CO, USA.

- **Shutong Qi**, Yinpeng Wang, Yongzhong Li, Xuan Wu, Qiang Ren and Yi Ren, "2D Electromagnetic Solver Based on Deep Learning Technique," in *IEEE Journal of Multiscale and Multiphysics Computational Technique,* 2020, 5: 83-88.

- Qiang Ren, Yinpeng Wang, Youngzhong Li and **Shutong Qi**, "Sophisticated Electromagnetic Forward Scattering Solver via Deep Learning," in *Springer Singapore Pte.* Limited, 2021.

- Yinpeng Wang, Yongzhogn Li, **Shutong Qi** and Qiang Ren, "Electromagnetic Scattering Solver for Metal Nanostructures via Deep Learning," in *2021 Photonics & Electromagnetics Research Symposium (PIERS),* 2021, pp. 2419-2424, doi: 10.1109/PIERS53385.2021.9694820.

- Te-yen Wu, **Shutong Qi**, Junchi Chen, Mujie Shang, et al. "Fabriccio: Touchless Gestural Input on Interactive Fabrics," in *CHI '20: Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems April 2020.* Pages 1–14, https://doi.org/10.1145/3313831.3376681.

- Yipeng Wang, Yongzhong Li, **Shutong Qi** and Qiang Ren, "Predicting Scattering From Complex Nano-Structures via Deep Learning," in *IEEE Access,* vol. 8, pp. 139983-139993, 2020, doi: 10.1109/ACCESS.2020.3012132.

- Jiang Nan, **Shutong Qi**, Luo Feixiang, Wang Jun and Wang Wenfeng, "ADS-B Message Authentication Using Features of Signal in Transition Regions," in *IEEE International Conference on Signal, Information and Data Processing (ICSIDP),* 2019, pp. 1-5, doi: 10.1109/ICSIDP47821.2019.9172935.

- Zhiyao Tang, Liang Sun, Lu Cao, **Shutong Qi** and Yong Feng, "Reconsidering Design of Multi-Antenna NOMA Systems With Limited Feedback," in *IEEE Transactions on Wireless Communications,* vol. 19, no. 3, pp. 1519-1534, March 2020, doi: 10.1109/TWC.2019.2954386.

AWARDS & ACHIEVEMENTS

- Excellent Graduate, Beihang University *Jun. 2020*
- Excellent Student Leader, Beihang University *three times*
- Excellent Academic Scholarship, Beihang University *twice*
- Outstanding Social Work Scholarship, Beihang University *twice*
- Outstanding Scientific Competition Scholarship, Beihang University *Oct.2018*
- Meritorious Winner (Top 7%), COMAP Mathematical Contest in Modeling (MCM) *Feb.2018*