

Curriculum Vitae

Yunfan Wang

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SUMMARY

PhD ECE student interested in RF and THz integrated circuits, systems, and algorithm
(Advisor: David Blaauw)

EDUCATION

- ❑ **University of Michigan**, Ann Arbor, Ph. D., Electrical and computer engineering *Since 08/2021*
- ❑ **Tsinghua University**, Beijing, China, M. S., Electronic engineering (3.8/4.0) *06/2021*
- ❑ **Tsinghua University**, Beijing, China, B. S., Physics (4.0/4.0) *07/2018*

HONORS & AWARDS

- ❑ **Outstanding Bachelors Thesis Award of Tsinghua University** *07/2018*
- ❑ **Outstanding Graduates of Tsinghua University** *07/2018*
- ❑ **Special Prize of University Students Physics Competition in China** *06/2015*
- ❑ **National Scholarship of China** *09/2015*

WORK EXPERIENCES

- ❑ **Graduate Student Research Assistant (GSRA), University of Michigan** *Since 08/2021*
 - Michigan Integrated Circuits Laboratory (MICL) (Advisor: David Blaauw)
- ❑ **Teaching assistant (TA), Tsinghua University** *09/2020–02/2021*
- ❑ **Student intern, University of California, SanDeigo** (Advisor: Peter Asbeck) *07/2017–09/2017*
- ❑ **Research Assistant (RA), Tsinghua University** *07/2016–07/2021*
 - Intelligent Microwave Circuit and System Lab (IMCS) (Advisor: Wenhua Chen)

PUBLICATIONS

- 1 Yi Shen, Boxuan Chang, Chien-Wei Tseng, Yunfan Wang, Qirui Zhang, Zichen Fan, Zhen Feng, Rahul Narashimha, Andrea Bejarano-Carbo, Hun-Seok Kim, David Blaauw, “A Crystal-Less Frequency-Modulation Transmitter IC with Joint Neural-Network-Driven Modulation and Coding for Low-Power Connectivity,” in 2025 IEEE International Solid-State Circuits Conference (ISSCC), Feb, 2025, San Francisco, USA.
- 2 Chien-Wei Tseng, Zhen Feng, Zichen Fan, Hyochan An, Yunfan Wang, Hun-Seok Kim, David Blaauw, “A Low-Power Highly Reconfigurable Analog FIR Filter With 11-Bit Charge-Domain DAC for Narrowband Receivers,” in *IEEE Solid-State Circuits Letters*, vol. 7, pp. 74-77, 2024
- 3 Yunfan Wang, Steve Young, Demba Komma, Jaechan Lim, Zhen Feng, Zichen Fan, Chien-Wei Tseng, Hun Seok Kim, and David Blaauw, “Global Localization of Energy-Constrained Miniature RF Emitters using Low Earth Orbit Satellites,”. In The 21st ACM Conference on Embedded Networked Sensor Systems (SenSys '23), November 12–17, 2023, Istanbul, Turkiye.
- 4 S. Li, B. Xia, X. Li, Y. Wang, X. Liu, and W. Chen, “Analysis and Design of Broadband Balance-Compensated Transformer Baluns for Silicon-Based Millimeter-Wave Circuits,” in *IEEE Transactions on Circuits and Systems I: Regular Papers*, vol. 70, no. 8, pp. 3103-3116, Aug. 2023
- 5 Chien-Wei Tseng, Zhen Feng, Zichen Fan, Hyochan An, Yunfan Wang, Hun-Seok Kim, and David Blaauw, “A Reconfigurable Analog FIR Filter Achieving –70dB Rejection with Sharp Transition for Narrowband Receivers,” *2023 IEEE Symposium on VLSI Technology and Circuits (VLSI Technology and Circuits)*, Kyoto, Japan, 2023, pp. 1-2.
- 6 S. Li, W. Chen, X. Li, and Y. Wang, “A 5.1 dBm 127–162 GHz Frequency Sextupler with Broadband Compensated Transformer-Based Baluns in 22nm FD-SOI CMOS,” *2022 IEEE Radio Frequency Integrated Circuits Symposium (RFIC)*, Denver, CO, USA, 2022, pp. 315-318.

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- 7 Y. Wang, W. Chen, X. Li, J. Chen, L. Chen, F. Huang, S. Li, Z. Wang, "Highly Efficient Terahertz Beam-Steerable Integrated Radiator Based on Tunable Boundary Conditions," *IEEE J. Solid-State Circuits*, vol. 57, no. 5, pp. 1314-1331, May, 2022.
- 8 Y. Wang, W. Chen, X. Li, Z. Wang, J. Chen and L. Chen, "A 0.41-THz Coherent Harmonic Radiation Array Based on Mode-dependent Boundaries," *2021 IEEE International Workshop on Electromagnetics: Applications and Student Innovation Competition (iWEM)*, Guangzhou, China, 2021, pp. 1-3.
- 9 Y. Wei, X. Li, Y. Wang, T. Hirtz, Z. Guo, Y. Qiao, T. Cui, H. Tian, Y. Yang, and T. L. Ren, "Graphene-based multifunctional textile for sensing and actuating" *ACS nano* 15 (11), 17738-17747, 2021.
- 10 X. Li, W. Chen, P. Zhou, Y. Wang, F. Huang, S. Li, J. Chen, and Z. Feng, "A 250–310 GHz Power Amplifier With 15-dB Peak Gain in 130-nm SiGe BiCMOS Process for Terahertz Wireless System," in *IEEE Transactions on Terahertz Science and Technology*, vol. 12, no. 1, pp. 1-12, Jan. 2021.
- 11 X. Li, W. Chen, S. Li, Y. Wang, F. Huang, X. Yi, R. Han, and Z. Feng, "A high-efficiency 142-182-GHz SiGe BiCMOS power amplifier with broadband slotline-based power combining technique", *IEEE J. Solid-State Circuits*, vol. 57, no. 2, pp. 371-384, Feb. 2021.
- 12 Y. Wang, W. Chen, X. Li, J. Chen, L. Chen, and S. Li, "300-335 GHz highly efficient beam steerable radiator based on tunable boundary conditions", *IEEE Radio Frequency Integrated Circuits (RFIC)*, Atlanta, GA, USA, Jun. 2021.
- 13 Y. Wang, W. Chen, X. Li, S. Li, and P. Zhou, "305-325 GHz non-reciprocal isolator based on peak-control gain-boosting magnetless nonreciprocal metamaterials", *IEEE Radio Frequency Integrated Circuits (RFIC)*, Atlanta, GA, USA, Jun. 2021.
- 14 L. Chen, W. Chen, Y. Wang, and Z. Feng, "Linearization of GaN HEMT-Based Power Amplifiers Using a Bias Tracking Digital Predistortion," *2021 IEEE MTT-S International Wireless Symposium (IWS)*, Nanjing, China, 2021, pp. 1-3.
- 15 X. Li, W. Chen, Y. Wang, and Z. Feng, "A 160 GHz High Output Power and High DC-to-RF Efficiency Fundamental Oscillator in a 130-nm SiGe BiCMOS Process," *2020 50th European Microwave Conference (EuMC)*, Utrecht, Netherlands, 2021, pp. 1159-1162.
- 16 X. Li, W. Chen, S. Li, Y. Wang, F. Huang, X. Yi, R. Han, and Z. Feng, "A high-efficiency 142-182-GHz SiGe BiCMOS power amplifier with broadband slotline-based power combining technique", *IEEE J. Solid-State Circuits*, early access, 2021.
- 17 Yancong Qiao, Xiaoshi Li, Jinming Jian, Qi Wu, Yuhong Wei, Hua Shuai, Thomas Hirtz, Yao Zhi, Ge Deng, Yunfan Wang, Guangyang Gou, Jiandong Xu, Tianrui Cui, He Tian, Yi Yang, and Tian-Ling Ren, "Substrate-Free Multilayer Graphene Electronic Skin for Intelligent Diagnosis", *ACS Applied Materials & Interfaces* 2020 12 (44).
- 18 X. Li, W. Chen, Y. Wang, and Z. Feng, "A 160 GHz high output power and high efficiency power amplifier in a 130-nm SiGe BiCMOS Technology", *IEEE Radio Frequency Integrated Circuits (RFIC)*, Los Angeles, CA, USA, Jun. 2020.
- 19 X. Li, W. Chen, Y. Wang, and Z. Feng, "A 180 GHz high-gain cascode power amplifier in a 130nm SiGe process", *Electronics letters*, 2020.
- 20 Y. Wang, W. Chen, and X. Li, "A 210-GHz magnetless nonreciprocal isolator in 130-nm SiGe BiCMOS based on resistor-free unidirectional ring resonators", *IEEE Micro. Wireless Compon. Lett.*, vol. 30, pp. 524427, 2020.
- 21 Y. Qiao, Y. Wang, and et al. "Multifunctional and high-performance electronic skin based on silver nanowires bridging graphene", *Carbon*, vol. 156, pp. 253-260, 2020.
- 22 Y. Wang, W. Chen, and X. Chen, "Highly linear and magnetless isolator based on weakly-coupled nonreciprocal metamaterials", *IEEE Trans. Microw. Theory and Techn.*, vol. 67, no. 11, 2019.
- 23 Y. Wei, Y. Qiao, C. Jiang, Y. Wang, F. Wang, M. Li, and et al, "A wearable skin-like ultra-sensitive artificial graphene throat", *ACS Nano*, vol. 13, no. 8, pp. 8639-8647, 2019.
- 24 Y. Qiao, Y. Wang, He Tian, M. Li, et. al, "Multilayer graphene epidermal electronic skin", *ACS nano*, vol. 12, no. 9, pp. 8839-8846, 2018.

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- 25 Y. Wang, and W. Chen. "A novel design method of RF lens for long-range wireless power transmission," *IEEE antenna and wireless propagate. lett.* vol. 16, pp. 3159-3162, 2017.