

Taran Anusorn

GRAGUATE STUDENT

Austin, TX, U.S.A | taran.anusorn@utexas.edu | <https://tarananusorn.github.io/about/>

Current Research Interests

Advancing next-generation communication and sensing technologies through innovative millimeter-wave and terahertz front-end solutions:

- Chip-scale hybrid RF microsystems
- RF MEMS
- 3D-printable passive devices
- Beamforming and wavefront engineering

Education

University of Texas at Austin

Austin, TX, U.S.A.

Master of Science in Electrical and Computer Engineering

Aug 2024 - Present

- Academic Track: Electromagnetics and Acoustics
- GPAX: 4.00/4.00 (currently)

Chulalongkorn University

Bangkok, Thailand

Bachelor of Engineering in Electrical Engineering (1st class honors)

July 2019 - July 2023

- Elective specializations: Communications and Control Systems
- GPAX: 3.94/4.00
- Senior project: Design and Development of Reflecting Metasurfaces for 5G and Beyond Wireless Communication Systems (In collaboration with the National Electronics and Computer Technology Center)
- Senior project advisors: Dr.Panuwat Janpugdee, Dr.Suwit Kiravittaya, Dr.Paramin Sangwongngam

Honors

Recipient of the Anandamahidol Scholarship

2024 - 2029

The Anandamahidol Foundation

- Fully funded scholarships, granted annually, for young Thai students to pursue graduate studies abroad in eight fields of studies, including medicine, science, engineering, social sciences, arts and humanities, agriculture, dentistry, and veterinary medicine. Only one outstanding student is selected for each field.

Publications

Journal Articles

- T. Anusorn, O. Barrera, S. Cho, J. Kramer, V. Chulukhadze, T. -H. Hsu, J. Campbell, I. Anderson, and R. Lu, "Enabling Miniaturization of Centimeter and Millimeter-Wave Filters with Thin-Film Lithium Niobate Complementarily Oriented Bulk Acoustic Resonators" (*invited to IEEE T-MTT Special Issue*).
- T. Anusorn, S. Korananan, P. Janpugdee, and D. Torrungrueng, "Compact CCITL-Inspired Power Dividers Using Multi-section Transmission Lines," *International Journal of RF and Microwave Computer-Aided Engineering*, vol. 2024, no. 1, 2024, doi: 10.1155/mmce/2587550.
- T. Anusorn, K. Sukpreecha, S. Kawdungta, P. Janpugdee, and D. Torrungrueng, "Parameter Extraction of Asymmetric Reciprocal Transmission Lines (ARTLs) from Scattering Parameters with Transmission-Line-Based Analyses of Differential Antennas," *IEEE Access*, vol. 12, pp. 141052-141063, 2024, doi: 10.1109/ACCESS.2024.3466300.

International Conferences

- O. Barrera, T. Anusorn, S. Cho, J. Kramer, V. Chulukhadze, T. -H. Hsu, J. Campbell, I. Anderson, and R. Lu, "Frequency and Bandwidth Design of Millimeter Wave Thin-Film Lithium Niobate Acoustic Filters" (*accepted for presentation at IMS 2025*).
- N. Ngamthanacom, T. Anusorn, R. Viratikul, N. Chudpooti, P. Janpugdee, and N. Somjit, "All-Dielectric Frequency Selective Surface Using 3D- Printable Material for Sub-THz Applications," in *2024*

Research, Invention, and Innovation Congress: Innovative Electricals and Electronics (RI2C), Bangkok, Thailand, 2024, pp. 152-155, doi: 10.1109/RI2C64012.2024.10784337.

- T. Anusorn, P. Janpugdee, S. Kiravittaya, and P. Sangwongngam, "**Dual-Polarized Phase-Gradient Reflecting Metasurface for 5G mmWave Coverage Improvement**," in *2023 IEEE International Symposium On Antennas And Propagation (ISAP)*, Kuala Lumpur, Malaysia, 2023, pp. 1-2, doi: 10.1109/ISAP57493.2023.10388656.

Work Experience

Research Engineering/Scientist Assistant

Microelectronics Research Center, The University of Texas at Austin

Aug 2024 - Present
Austin, TX, U.S.A.

- Design mmWave acoustic filters (PI: Dr.Ruochen Lu)

Independent Researcher

Department of Electrical Engineering, Chulalongkorn University

July 2023 - Aug 2024
Bangkok, Thailand

- Designed a 3D-printable THz lens antenna under the supervision of Dr. Nutapong Somjit. (In collaboration with University of Leeds, Beijing Normal University, and KTH Royal Institute of Technology)
- Investigated the utilization of bi-characteristic transmission line (BCITL) model under the supervision of Dr. Danai Torrungrueng. (In collaboration with King Mongkut's University of Technology North Bangkok and Rajamangala University of Technology Lanna)

Teaching Assistant (2102221 - Engineering Electromagnetics)

Department of Electrical Engineering, Chulalongkorn University

Jan - May 2024
Bangkok, Thailand

- Performed tutorial sessions (course recaps and exercises).
- Graded exams and homeworks.
- Prepared a course project regarding the propagation of plane wave in multiple media.

Research Assistant Intern

National Science and Technology Development Agency (NSTDA)

May - July 2022
Pathum Thani, Thailand

- Designed and developed the visible light communication system using a Raspberry Pi camera for an indoor positioning system under the supervision of Dr.Pornanong Pongpailbool.

Skills and Computer Literacy

High Frequency Measurement	Vector Network Analyzer, Optical Time Domain Reflectometer
Computer-Aided Design	Ansyz HFSS, COMSOL, CST MWS, PathWave ADS, AutoCAD
Computer Programming	MATLAB, Python, C/C++
Graphic and Document	L ^A T _E X, MS Office, Jekyll

Relevant Courseworks

Microwave Engineering, Principles of Antennas, Physical Acoustics, Semiconductor Devices, Nonlinear/Ultrafast Optics, Optical Fiber Communication, Mobile Communication and Networking, Artificial Intelligence for Engineering, Stochastic Processes, Industrial Automation

Extracurricular Activities

KH50 Volunteer Camp

Camp Director

Feb - May 2023

- Planned and organized a summer volunteer camp in Udon Thani province, Thailand, with 30 student staff and 50 ordinary participants, raising 400,000 THB in funds. We also coordinated with both private and government agencies to achieve our goal of transforming an empty area into an interactive learning space, constructing a multipurpose building, and conducting inspiring educational activities for a rural village school.

Residence of Chulalongkorn University Volunteer Club

Club President

Jun 2021 - Jun 2022

- Organized multiple volunteer activities, including three volunteer camps and online workshops during the COVID-19 pandemic, and managed over 500k THB in the club budget.

NITAD 18 Engineering Exhibition*Event Creator Team Member*

Dec 2021 - Mar 2022

- Conceived and planned multiple online events in the engineering student exhibition during the COVID-19 pandemic, including online showcases of engineering projects, informative engineering talk shows and podcasts, and interactive hands-on workshops tailored for high school students.

Engineering Student Committee*Volunteer Physics Instructor*

Aug 2021

- Prepared and delivered a concise preparatory physics course to over 100 enthusiastic freshman engineering students. The course primarily focused on calculus-based kinematics and kinetics, while also offering tips and tricks to succeed in college-level physics studies.

Engineering Student Committee*Corporate Social Responsibility (CSR) Team Member*

Jul 2020 - Jun 2021

- Collaborated with the team to execute a range of CSR activities, which encompassed two volunteer camps, an online workshop focusing on the utilization of solar-powered water pumps for rural areas, and activities involving the construction of interactive bookshelves for schools.
- Coordinated with private companies for sponsorships.