Taran Anusorn

Graguate Student

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

Current Research Interests

- Millimeter-wave and Terahertz Components and Systems for Communication and Sensing Applications
- Adaptive RF Front-End Solutions
- Miniaturized Microwave Components
- 3D-Printable Devices
- On-Chip Antennas
- RF MEMS
- RF Photonic Devices and Microsystems

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, 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.
- 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.

International Conferences

- 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.
- 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.

Work Experience

Research Engineering/Scientist Assistant Aug 2024 - Present
Microelectronics Research Center, The University of Texas at Austin *Austin, TX, U.S.A.*

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

Independent Researcher July 2023 - Aug 2024
Department of Electrical Engineering, Chulalongkorn University *Bangkok, Thailand*

- Designed a 3D-printable THz Mikaelian 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) Jan - May 2024
Department of Electrical Engineering, Chulalongkorn University *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 May - July 2022
National Science and Technology Development Agency (NSTDA) *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 Pongpaibool.

Skills and Computer Literacy

High Frequency Measurement	Vector Network Analyzer, Optical Time Domain Reflectometer
Computer-Aided Design	Ansys HFSS, COMSOL, CST MWS, PathWave ADS, AutoCAD
Computer Programming	MATLAB, Python, C/C++
Graphic and Document	LaTeX, MS Office, Jekyll

Relevant Courseworks

Microwave Engineering, Principles of Antennas, Physical Acoustics, Semiconductor Devices, Nonlinear/Ultrafast Optics, Optical Fiber Communication, Mobile Communication and Network, Artificial Intelligence for Engineering, Stochastic Processes, Smart Grid Technology, 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.