

Dr. Cagatay Tokgoz (US Citizen)

CONTACT INFORMATION

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EDUCATION

PhD, Electrical Engineering
The Ohio State University, Columbus, OH
Dissertation: Asymptotic high frequency analysis of the surface fields of a source excited circular cylinder with an impedance boundary condition
Major: Electromagnetics, **Minor:** Microwaves, Communications, Mathematics

MS, Electrical and Electronics Engineering
Middle East Technical University, Ankara, Turkey
Thesis: Derivation of closed-form Green's functions for cylindrically stratified media
Major: Electromagnetics, **Minor:** Microwaves, Communications

BS, Electrical and Electronics Engineering
Bilkent University, Ankara, Turkey
Concentration: Antennas, Microwaves, Communications

PROFESSIONAL EXPERIENCE

Lamar University, Department of Electrical Engineering, Beaumont, TX

Associate Professor *September, 2022 - present*

Assistant Professor *September, 2016 - August, 2022*

- External research grants received (**\$209,553** total):
 - C. Tokgoz (**PI**), “Application of asymptotic methods to faceted convex surfaces for radiation problems,” *Air Force Research Laboratory (AFRL) Contract*, (11/16/20-01/31/22), **\$98,095**.
 - C. Tokgoz (**PI**), “Application of asymptotic methods to faceted convex surfaces for co-site interference prediction,” *AFRL Contract*, (10/01/19-04/30/20), **\$27,986**.
 - C. Tokgoz (**PI**), “Application of asymptotic methods to faceted convex surfaces for co-site interference prediction,” *AFRL Contract*, (06/01/18-09/30/19), **\$83,472**.
- Summer Faculty Fellowship proposals accepted:
 - C. Tokgoz, “Evaluation of scattering from electrically large convex surfaces,” *Naval Surface Warfare Center (NSWC)*, Carderock, MD, 2025 (10 weeks) (not practiced).
 - C. Tokgoz, “Closed-form evaluation of physical optics integrals for plane wave incidence and far field scattering,” *Naval Surface Warfare Center (NSWC)*, Carderock, MD, 2024 (10 weeks).
 - C. Tokgoz, “Closed-form evaluation of physical optics integrals including curvature,” *Naval Surface Warfare Center (NSWC)*, Carderock, MD, 2023 (10 weeks).
 - C. Tokgoz, “Prediction of radiation from an aperture antenna on an electrically large triangulated conducting convex surface,” *AFRL, WPAFB, OH*, 2023 (not practiced due to the *NSWC Faculty Fellowship*).
 - C. Tokgoz, “Prediction of radiation from a monopole antenna on a triangulated conducting convex surface,” *AFRL, WPAFB, OH*, 2022 (12 weeks).

- C. Tokgoz, “Ray tracing for radiation of sources on a faceted convex surface,” *AFRL*, WPAFB, OH, 2020 (12 weeks).
- C. Tokgoz, “Geodesic ray tracing for radiation of sources on a convex surface,” *AFRL*, WPAFB, OH, 2019 (not practiced due to the *AFRL Contract*).
- C. Tokgoz, “Prediction of co-site interference between airborne antennas,” *AFRL*, WPAFB, OH, 2018 (not practiced due to the *AFRL Contract*).
- C. Tokgoz, “Asymptotic methods for antenna-platform interactions,” *AFRL*, WPAFB, OH, 2017 (12 weeks).
- External commercial software support received:
 - Campus-wide free floating license for the academic version of Altair software products for at least 4 years for 1,000 units (Spring 2022-present), at least **\$25,200** value.
- Internal research grants received (**\$160,059** total):
 - M. A. Oloyede and C. Tokgoz (**PI**), “A Comparative Study of Monopole Antennas Using Various Simulation Methods,” *Undergraduate Research Grant (URG)*, (01/24/25-05/31/25), **\$2,000**.
 - B. Eren Tokgoz, T. Selvaratnam, G. Gummel, B. Williams, S. Hwang, C. Tokgoz, M. Guidry, C. Boone, and A. Clavijo, (**Co-PI**), “Community resilience indicator system: Developing a community resilience framework in response to natural disasters - Phase IV,” *Center for Resiliency (CfR) Grant*, (11/01/24-08/31/25), **\$25,000**.
 - B. Eren Tokgoz, T. Selvaratnam, G. Gummel, B. Williams, S. Hwang, C. Tokgoz, M. Guidry, C. Boone, and A. Clavijo, (**Co-PI**), “Community resilience indicator system: Developing a community resilience framework in response to natural disasters - Phase III,” *Center for Resiliency (CfR) Grant*, (11/01/23-08/31/24), **\$49,061**.
 - B. Eren Tokgoz, T. Selvaratnam, G. Gummel, B. Williams, S. Hwang, C. Tokgoz, M. Guidry, C. Boone, and A. Clavijo, (**Co-PI**), “Community resilience indicator system: Developing a community resilience framework in response to natural disasters - Phase II,” *Center for Resiliency (CfR) Grant*, (11/01/22-08/31/23), **\$59,998**.
 - S. B. Boudreaux and C. Tokgoz (**PI**), “Vision guided autonomous robot,” *Summer Undergraduate Research Fellowship (SURF) Grant*, (04/01/19-08/31/19), **\$4,500**.
 - D. Singh, B. Eren Tokgoz, and C. Tokgoz (**Co-PI**), “Public and environmental risk identification of commonly transported chemicals at ports in Gulf of Mexico,” *SURF Grant*, (04/01/18-08/31/18), **\$4,500**.
 - C. Tokgoz (**PI**), “Prediction of co-site interference between airborne antennas,” *Proposal Writing Research Enhancement Grant (REG)*, (09/01/17-08/31/18), **\$15,000**.
- Undergraduate courses taught:
 - *ELEN 2301 Computers and Programming II*
 - *ELEN 3371 Electromagnetics*
 - *ELEN 3381 Electrical Analysis*
 - *ELEN 4304 Antennas and Wireless Propagation*
 - *ELEN 4306 Senior (Capstone) Project Design I*
 - *ELEN 4307 Senior (Capstone) Project Design II*
 - *ELEN 4387 Computer Organization and Architecture*
- Senior (Capstone) projects mentored (81 projects):
 - 2024-2025 academic year (7 projects)
<https://www.youtube.com/playlist?list=PLUA0WqgdNBiE5tK36m-E01mwyYYKNPtJh>

- 2023-2024 academic year (10 projects only in Fall 2023)
- 2022-2023 academic year (6 projects)
https://www.youtube.com/playlist?list=PLUA0WqgdNBiG9Y2JqWeDpx_vKx_Xay5Jt
- 2021-2022 academic year (7 projects)
<https://www.youtube.com/playlist?list=PLUA0WqgdNBiFUEmV5ZyvRXJRtB2Q-3jn2>
- 2020-2021 academic year (7 projects)
<https://www.youtube.com/playlist?list=PLUA0WqgdNBiGg8D1wT5hixzC4wboT-bjE>
- 2019-2020 academic year (12 projects)
https://www.youtube.com/playlist?list=PLUA0WqgdNBiGmOnrSbXuK-_y7JlKjeK0g
- 2018-2019 academic year (9 projects)
https://www.youtube.com/playlist?list=PLUA0WqgdNBiGZ8E-bkGBpRkYHYZGreX_b
- 2017-2018 academic year (10 projects)
<https://www.youtube.com/playlist?list=PLUA0WqgdNBiFA3k8JDL3gnUDpnHcSc8Qh>
- 2016-2017 academic year (13 projects)
<https://www.youtube.com/playlist?list=PLUA0WqgdNBiE36p6HPYwH-iwUrE2-GFih>
- Graduate courses taught:
 - *ELEN 5301 Optimization*
 - *ELEN 5350 Python Programming*
 - *ELEN 6350 Advanced Python Programming*
 - *ELEN 5371 Computational Electromagnetics*
 - *ELEN 6371 Advanced Computational Electromagnetics*
- Service as a graduate student Faculty Advisor and Committee Chair:
 - Sushma K. C., *Project Engineer, Borri Power US, Inc.*, Houston, TX (Graduated with an *MES* degree in Summer 2024)
Thesis: Limitation of Asymptotic Method in Predicting Radiation Pattern from Monopole Antenna on a Conducting Convex Surface
 - Tanha Lora Nur, *Electrical Design Engineer, Polyglass USA, Inc.*, Waco, TX (Graduated with an *MES* degree in Fall 2023)
Thesis: The integration of 5G & Time Sensitive Network for Communication
 - Manthan A. Shah, *Network Engineer IV, Charter Communications*, Greenwood Village, CO (Graduated with a *DE* degree in Fall 2021)
Dissertation: Radar Cross Section Prediction for Electrically Large Conducting Platforms Using Iterative Physical Optics with Physical Theory of Diffraction
 - Babajide A. Salau, *Compliance Engineer, Integra Mission Critical*, Houston, TX (Graduated with a *DE* degree in Fall 2020)
Dissertation: Radiation from Monopole Antennas and Their Arrays on an Electrically Large Conducting Convex Surface
 - Newaz Sharif, *Senior Engineer, Qualcomm*, Richardson, TX (Graduated with an *MES* degree in Fall 2018)
Thesis: Design, Simulation and Optimization of Pyramidal Horn Antennas
- Service as a graduate student Committee Member:
 - Amirmohammad N. Shargh (Graduated with a *DE* degree, Advisor: Dr. Zargarzadeh)
 - Rishi Bharadwaj (Graduated with a *DE* degree, Advisor: Dr. Bahrim)
 - Sadra N. Shargh (Graduated with a *DE* degree, Advisor: Dr. Zargarzadeh)
 - Mohammad M. Islam (Graduated with a *DE* degree, Advisor: Dr. Zargarzadeh)
 - Mehdi Dadvar (Graduated with a *DE* degree, Advisor: Dr. Zargarzadeh)

- Subed Lamichhane (Graduated with an *MES* degree, Advisor: Dr. Sayil)
- Hafiz M. Ahmad (Graduated with an *MES* degree, Advisor: Dr. Zargarzadeh)
- Sansar Bastola (Graduated with an *MES* degree, Advisor: Dr. Zargarzadeh)
- Sujana Thapa (Graduated with an *MES* degree, Advisor: Dr. Barzegaran)
- Tanushree Agarwal (Graduated with a *DE* degree, Advisor: Dr. Barzegaran)
- Nishant M. Gadhvi (Graduated with an *MES* degree, Advisor: Dr. Zargarzadeh)
- Comprehensive exam committee member for many non-thesis *ME* students
- Service as an undergraduate student Faculty Advisor:
 - Mololuwa A. Oloyede, *URG Grant* (Spring 2025)
 - Ethan D. Hall, *AFRL Contracts* (Fall 2018-Summer 2021)
 - Steven B. Boudreaux, *SURF Grant* (Spring 2019-Summer 2019)
 - Dikshant Singh, *SURF Grant* (Spring 2018-Summer 2018)
- Other service activities:
 - Member of College Personnel Committee
 - Member of Faculty-Student Relations Committee
 - Member of Department Chair and Faculty Search Committees
 - Department Representative for the *Southern Association of Colleges and Schools Commission on Colleges (SACSCOC)*
- Awards received by students advised/mentored:
 - **1st Best Project in College of Engineering:** R. Shugart, B. Mai, K. Nsiku, M. Prudhomme, (Electrical Eng.-Mechanical Eng. Joint Team) *Lamar University College of Engineering Senior Design Symposium*, Beaumont, TX, May 2025.
 - **2nd Best Project in College of Engineering:** B. Baker, M. R. Trahan, D. Nesbitt, J. Boyko, and S. Thedford, *Lamar University College of Engineering Senior Design Symposium*, Beaumont, TX, May 2025.
 - **3rd Place:** E. Breaux, *IEEE Region 5 East Area Poster Competition*, Feb. 2023.
 - **5th Best Oral Presentation:** S. Ayres, J. George, S. Martin, L. Nguyen, and A. White, *NASA TSGC Design Challenge*, League City, TX, Nov. 2022.
 - **1st Best Project in College of Engineering:** A. N. Bahrim, B. J. Gray, M. W. Johnson, J. C. Lake, and T. L. Nguyen, *Lamar University College of Engineering Senior Design Symposium*, Beaumont, TX, Apr. 2022.
 - **4th Place:** A. N. Bahrim, *IEEE Region 5 Regional Poster Competition*, Apr. 2022.
 - **2nd Place:** A. N. Bahrim, *IEEE Region 5 East Area Poster Competition*, Feb. 2022.
 - **3rd Best Video, 3rd Showcase Audience Poll:** A. N. Bahrim, B. J. Gray, M. W. Johnson, J. C. Lake, and T. L. Nguyen, *NASA TSGC Design Challenge*, League City, TX, Nov. 2021.
 - **1st Best Engineering Presentation:** J. Silva, J. Vaca, L. Watts, and M. Olvera, *Undergraduate Research & Creativity Expo*, Beaumont, TX, Apr. 2019.
 - **2nd Best Engineering Presentation:** D. Singh, *Undergraduate Research & Creativity Expo*, Beaumont, TX, Apr. 2019.
 - **3rd Best Poster, 4th Best Presentation, 5th Best Model, 5th Best Team:** G. Oliver, S. Bridle, T. Ellis, J. Farias, and C. Jordan, *NASA TSGC Design Challenge*, League City, TX, Apr. 2019.
 - **2nd Best Undergraduate Presentation:** D. Singh, *Texas STEM Conf.*, Beaumont, TX, Nov. 2018.

- **3rd Best Graduate Poster:** B. A. Salau, *Texas STEM Conf.*, Beaumont, TX, Nov. 2018.
- **5th Best Poster, 7th Best Team:** G. Oliver, S. Bridle, T. Ellis, J. Farias, and C. Jordan, *NASA TSGC Design Challenge*, League City, TX, Nov. 2018.

Naval Surface Warfare Center, Topside Signatures and Technology, Carderock, MD

Senior Faculty Fellow

Summer, 2024

- Developed closed-form solutions to physical optics (PO) surface integrals for plane wave incidence and far field scattering.
- Validated the closed-form solutions on benchmark geometries using Altair FEKO software.

Naval Surface Warfare Center, Topside Signatures and Technology, Carderock, MD

Senior Faculty Fellow

Summer, 2023

- Developed closed-form solutions to PO surface integrals for scattering from conducting convex surfaces by incorporating curvature information.
- Validated the closed-form solutions on benchmark geometries using Altair FEKO software.

Air Force Research Laboratory, Sensors Directorate, WPAFB, OH

Faculty Fellow

Summer, 2022

- Developed ray tracing algorithms and uniform geometrical theory of diffraction (UTD) solutions for radiation from sources on conducting convex surfaces.
- Validated the algorithms on benchmark geometries using Altair FEKO software.

Air Force Research Laboratory, Sensors Directorate, WPAFB, OH

Faculty Fellow

Summer, 2020

- Developed an improved UTD solution for surface fields on a source excited circular cylinder with an impedance boundary condition.
- Developed an improved paraxial solution for surface fields on a source excited circular cylinder with an impedance boundary condition.
- Proposed an approach for combining these two asymptotic solutions, analytically.

Air Force Research Laboratory, Sensors Directorate, WPAFB, OH

Faculty Fellow

Summer, 2017

- Developed an algorithm to identify multiple geodesic ray paths between antennas on a faceted convex surface to predict co-site interference.
- Developed algorithms to extract geometrical parameters from a faceted surface.
- Applied UTD along geodesic ray paths to predict co-site interference.

Raytheon Technologies Research Center, Systems Department, Embedded Systems and Networks Group, Communications Discipline, East Hartford, CT

Staff Research Scientist

October, 2011 - August, 2016

- Externally funded research projects:
 - *Diagnostic precursors to electrical connector aging and failure (\$450K funding from NASA contract NNA12AB91C)*: Developed RF models based on transmission line theory and nonlinear least squares to characterize partially inserted connectors, and validated them with network analyzer measurements.
 - *Additive topology optimized manufacturing with embedded sensing (ATOMeS) (\$1.5M funding from NETL contract FE0012299)*: Designed RFID reader and tag coils for optimum power and data transfer for a sensor embedded in metal using additive manufacturing. Validated simulations with measurements on effects of wire size, coil size and separation, ferrite property and conductivity.
 - *Operations support and sustainment technology (OSST), Capabilities-based operations and sustainment technology - Aviation (COST-A) (funding from AATD)*: Conceptualized usage of a hollow composite rotor blade as a waveguide for wireless power and data transfer for a wireless sensor network. Validated simulations with wireless power transfer measurements.
 - *Integrated hybrid structural management system (IHSMS) (funding from ONR)*: Analyzed a wireless sensor network on a helicopter and devised methodology for optimum link budget and antenna placement. Improved reliability of wireless communications with sensors by minimizing packet error rate.
- Corporate and business unit sponsored research projects:
 - Conducted measurements using X and K band Doppler radars, and UWB radars. Developed signal processing algorithms including filtering, in-phase and quadrature imbalance compensation, circle fitting and arctangent demodulation for breathing and heartbeat detection from measured data.
 - Developed a complex high fidelity RF propagation model for autonomous navigation in urban areas. Incorporated capabilities to the model to predict link budget in Airbus A320 passenger and Boeing 777 cargo aircraft for WiFi coverage. Assisted mapping onto GPUs and validated with measured data.
 - Developed a LIDAR model for evidence grid generation.
 - Managed to shield a box against inductive coupling for passive keyless entry.
 - Developed models to predict radiated EMI from a power converter. Conducted radiated EMI measurements in an anechoic chamber for validation.
 - Optimized a microwave oven cavity and a stirrer for optimum return loss.
 - Designed a conformal antenna for presence detection on and near escalators.
 - Designed a micro-strip antenna to monitor composite material curing process.
 - Developed models to predict wireless power transfer from non-rotating to rotating frames. Demonstrated how it can be improved using active tuning.
 - Designed an RF/microwave sensor for displacement measurements.
 - Designed a sensor to measure coating abrasion by aircraft engine blades.
 - Developed algorithms for better isolation of faults for an F-35 aircraft engine.
- Leadership activities:
 - Directed Communications Laboratory and Anechoic Chamber.

- Became an Achieving Competitive Excellence (ACE) Associate. ACE is an operating system like Six Sigma practiced by Raytheon Technologies.

Applied EM, Inc., Hampton, VA

Senior Research Engineer

December, 2002 - October, 2011

- Actively contributed to the proposals, management, execution and presentation of the deliverables for the following Department of Defense (DoD) funded research projects in excess of \$7M. Served as a PI for some of these projects.
- *Innovative improvements to high-frequency simulation methods for installed antenna performance (\$1.15M SBIR Phase I & II funding from NAVAIR contracts N68335-11-C-0074 & N68335-11-C-0357)*: Served as a PI. Made uCAST a state-of-the-art code after doing validation and verification studies.
<https://www.sbir.gov/sbirsearch/detail/382163> (Phase I, 2011)
<https://www.sbir.gov/sbirsearch/detail/385273> (Phase II, 2011)
- *Antenna placement optimization on large, airborne, naval platforms (\$900K SBIR Phase I & II funding from NAVAIR contracts N68335-10-C-0362 & N68335-11-C-0181)*: Served as a PI. Received training on GPU parallelization. Collaborated with Tech-X Corporation on GPU parallelization of the uCAST code.
<https://www.sbir.gov/sbirsearch/detail/1773> (Phase I, 2011)
<https://www.sbir.gov/sbirsearch/detail/385143> (Phase II, 2011)
- *Advanced antenna pattern and mutual coupling prediction software (\$1.35M SBIR Phase I & II funding from NAVAIR contracts N68335-07-C-0214, N68335-08-C-0255 & N68335-10-C-0459)*: Developed the airborne antenna pattern and co-site interference prediction code, uCAST, as the most advanced code applying ray tracing UTD to CAD models. Parallelized it using MPI. Interfaced it with FEKO.
<https://www.sbir.gov/sbirsearch/detail/92414> (Phase I, 2007)
<https://www.sbir.gov/sbirsearch/detail/92431> (1st Phase II, 2008)
<https://www.sbir.gov/sbirsearch/detail/1771> (2nd Phase II, 2010)
- *Design tools for applying characteristic modes to platform integrated antennas (\$804K STTR Phase I & II funding from Navy contracts N00014-08-M-0279 & N00014-10-C-0119)*: Developed a seamless interface between FEKO and a characteristic mode analysis code from OSU. Managed the GUI development for it.
<https://www.sbir.gov/sbirsearch/detail/92425> (Phase II, 2008)
<https://www.sbir.gov/sbirsearch/detail/92436> (Phase II, 2009)
- *Non-planar GPS receiving antenna (\$570K STTR Phase I & II funding from NAVAIR contracts N00014-05-M-0227 & N68335-06-C-0394)*: Designed a dual-band double stacked patch antenna for GPS. Worked with OSU to develop STAP-based SINR algorithms for an anti-jamming GPS antenna array. Achieved the best anti-jamming by optimizing the array placement on a non-planar surface.
<https://www.sbir.gov/sbirsearch/detail/92404> (Phase I, 2005)
<https://www.sbir.gov/sbirsearch/detail/92401> (Phase II, 2006)
- *Modeling the effect of aircraft rotor blades on airborne direction finding (DF) systems (\$70K SBIR Phase I funding from Army contract W15P7T-06-C-L002)*: Collaborated with OSU to identify and mitigate the effects of blade rotation and platform interactions on a DF antenna installed on a helicopter.
<https://www.sbir.gov/sbirsearch/detail/92408> (Phase I, 2005)

- *Computer simulation for the design of radar absorbing material (RAM) (\$846K SBIR Phase I & II funding from Army contract DAAH01-03-C-R13 & W31P4Q-04-C-R023):* Collaborated with the University of Delaware to design and optimize various types of RAMs and radomes using pareto genetic algorithms.
<https://www.sbir.gov/sbirsearch/detail/92388> (Phase I, 2003)
<https://www.sbir.gov/sbirsearch/detail/92382> (Phase II, 2003)
- *Radar signature prediction code (\$850K SBIR Phase I & II funding from ARL contracts DAAD17-02-C-0028 & DAAD17-03-C-0068):* Developed a complex high fidelity model to predict RCS of large vehicles. Used fast far field approximation, forward-backward method and MBPE to improve efficiency. Parallelized it on Unix and Linux platforms using MPI, reducing CPU time to a week for problems that would otherwise take years to run. A journal paper published on the work received an Outstanding Journal Article Award from OSU.
<https://www.sbir.gov/sbirsearch/detail/92378> (Phase I, 2002)
<https://www.sbir.gov/sbirsearch/detail/92376> (Phase II, 2003)
- *Advanced evaluation and design software for antennas with radome and FSS structures (part of \$820K SBIR Phase I & II funding from NAVAIR contracts N68335-02-C-0433 & N68335-03-C-0204 as subcontract from Virtual EM, Inc.):* Developed a complex high fidelity model for antenna placement on aircraft. Collaborated with Virtual EM, Inc. to interface it with an antenna simulation code.
<https://www.sbir.gov/sbirsearch/detail/346730> (Phase I, 2002)
<https://www.sbir.gov/sbirsearch/detail/346732> (Phase II, 2003)

Tech-Knowledge Advancement, Inc., Camarillo, CA

Senior Research Engineer

April, 2002 - December, 2002

- *Radio propagation prediction software for complex mixed path physical channels (\$99K SBIR Phase I funding from DARPA contract DAAH0103CR009):* Collaborated with SAIC/DEMACO, Inc. on full 3-D modeling of RF propagation through urban, rural, foliage and building interiors over a wide frequency band.
<https://www.sbir.gov/sbirsearch/detail/327234> (Phase I, 2002)
- *Innovative planning tool for urban electromagnetic environment characterization (\$750K SBIR Phase II funding from AFRL contract F19628-00-C-0052):* Collaborated with SAIC/DEMACO, Inc. to develop and incorporate capabilities for RF propagation in tree regions into wireless propagation simulation software, Urbana.
<https://www.sbir.gov/sbirsearch/detail/327232> (Phase II, 2000)
- Tested antenna/radar/wireless propagation software from SAIC/DEMACO, Inc.

The Ohio State University, Department of Electrical and Computer Engineering, ElectroScience Laboratory, Columbus, OH

Graduate Research Associate

September, 1997 - April, 2002

- *High frequency analysis of coupling between antennas on material coated conducting convex surfaces (funding source: NRL):* Developed a UTD-based asymptotic solution to predict the coupling between antennas on a material coated conducting convex surface. Developed a separate asymptotic solution for par-axial coupling which had been considered for years as an extremely challenging problem to solve.

- *Approximate UTD ray analysis of the fields radiated by a fuselage mounted airborne antenna array (funding source: the Boeing Company):* Developed a model to predict the radiation pattern of an antenna array on a Boeing passenger aircraft to assess if it satisfies interference requirements for satellite communications.

Middle East Technical University, Department of Electrical and Electronics Engineering, Ankara, Turkey

Graduate Teaching Assistant

August, 1996 - September, 1997

- Developed a closed-form Green's function solution for cylindrically layered media.
- Guided students on laboratory experiments for antennas and microwaves courses.
- Graded assignments for electromagnetic theory and probability courses.
- Worked on a feed array design for a reflector antenna pertaining to an atmospheric research radar in collaboration with the Technical University of Delft, Netherlands.

Aselsan Electronic Industries, Inc., Microwave System Technologies Division, RF and Microwave Laboratory, Ankara, Turkey

RF and Microwave Engineer

August, 1994 - June, 1996

- Designed and improved VCOs for the PLL of a frequency hopping radio.
- Designed VCO filters to improve harmonic suppression and satisfy specifications.
- Tested RF and microwave components using test devices.
- Designed and measured a DF antenna array in an anechoic chamber and outside.

**TECHNICAL
SKILLS**

- *Programming:* Matlab, Simulink, Python, C, C++, Fortran, Turbo Pascal, Visual Basic, MPI parallelization on multi-core CPUs & Unix/Linux clusters, CUDA.
- *Antenna/radar/wireless propagation simulation software:* FEKO, Antenna Magus, ANSYS tools (Maxwell Solver, HFSS, etc.), NEC-BSC, X-Patch, Urbana.
- *Methods in electromagnetics:* MoM, MLFMM, FEM, FDTD, UTD, PO, IPO.
- *CAD geometry and mesh generation/repair software:* Eclectic, COSMOS, FEMAP.
- *Test equipment:* Network and spectrum analyzers, Matlab programming to interface with them, antennas for indoor, outdoor and anechoic chamber measurements.
- *Circuit simulation software:* HSPICE.
- *Office tools:* MS Office, L^AT_EX, MiK_TE_X.
- *Operating systems:* Windows, macOS, Unix, Linux.

**PROFESSIONAL
SERVICE**

- *Senior Member, IEEE (Since 2013)*
- *President, IEEE Region 5 Beaumont Chapter (2020-2021)*
- *Vice President, IEEE Region 5 Beaumont Chapter (2019-2020)*
- *Elected Member, International Union of Radio Science (URSI) Commission B (Since 2019)*
- *Member, IEEE Antennas and Propagation Society*
- *Session Co-Chair, IEEE International Symposia on Antennas and Propagation*
- *Journal & Conference Reviewer:*
 - *IEEE Transactions on Antennas and Propagation*
 - *IEEE Transactions on Magnetics*

- *IEEE Sensors Journal*
- *IEEE Antennas and Wireless Propagation Letters*
- *IET Microwaves, Antennas and Propagation*
- *Microwave and Optical Technology Letters*
- *Applied Computational Electromagnetics Society (ACES) Journal*
- *Journal of Electromagnetic Waves and Applications (JEMWA)*
- *Progress in Electromagnetics Research (PIER) Journal*
- *Radio Science*
- *IEEE International Symposium on Antennas and Propagation*
- *International Applied Computational Electromagnetics Society (ACES) Symposium*
- *Asia-Pacific International Symposium and Exhibition on Electromagnetic Compatibility (APEMC)*

AWARDS & HONORS

- *Senior Faculty Fellow, NSWC* (2023 & 2024)
- *Faculty Fellow, AFRL* (2017, 2020 & 2022)
- *Merit Award, Lamar University* (2022)
- *Four Great Job Awards, Raytheon Technologies Research Center* (2011-2016)
- *Outstanding Journal Article Award, The Ohio State University ElectroScience Lab.* (2009)
- *Undergraduate Fellow, Sabanci Foundation, Turkey* (1990-1994)
- *Undergraduate Fellow, Bilkent University, Turkey* (1989-1994)
- *Rank 94, over a million applicants in a nationwide university entrance test, Turkey* (1989)

GOOGLE SCHOLAR

- <https://scholar.google.com/citations?user=sf7zYX8AAAAJ&hl=en>

BOOK CHAPTER

1. **C. Tokgoz** and N. C. Soldner, “Radar Hardware for Indoor Monitoring,” Chapter 2 in M. G. Amin (ed.), *Radar for Indoor Monitoring: Detection, Classification, and Assessment*, Boca Raton, CRC Press, Sep. 2017.

REFEREED JOURNAL ARTICLES

1. **C. Tokgoz** and D. Dault, “Radiation from sources on a triangulated conducting convex surface,” submitted to *Waves Random Complex Media*.
2. **C. Tokgoz** and D. Dault, “Geometry based parameter extraction and creeping wave evaluation for triangulated convex surfaces,” *Waves Random Complex Media*, pp. 1-19, doi: 10.1080 /17455030.2022.2079759, Jun. 2022.
3. M. A. Shah, **C. Tokgoz**, and B. A. Salau “Radar cross section prediction using iterative physical optics with physical theory of diffraction,” *IEEE Trans. Antennas Propag.*, vol. 70, issue 6, pp. 4683-4690, doi: 10.1109 /TAP.2021.3137202, Mar. 2022.
4. **C. Tokgoz**, B. A. Salau, and M. A. Shah, “Radiation from a monopole antenna array on an electrically large conducting convex surface,” *IEEE Antennas Wireless Propag. Lett.*, vol. 20, issue 9, pp. 1681-1685, doi: 10.1109 /LAWP.2021.3093377, Jun. 2021.
5. B. Salau, **C. Tokgoz**, and N. Yilmazer, “On special functions for radiation from sources close to an electrically large convex surface,” *IEEE Antennas Wireless Propag. Lett.*, vol. 18, issue 8, pp. 1611-1615, doi: 10.1109 /LAWP.2019.2925145, Aug. 2019.
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