CIHAN ASCI

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EDUCATION

Tufts University, Medford, MA, USA — *Sep. 2018–Jul. 2024*
Ph.D. in Electrical & Computer Engineering — CGPA: 3.88 / 4.00.
Research Interests: Analog/mixed–signal circuit design, sensors, RF circuits.

Middle East Technical University, Ankara, Turkey — *Feb. 2016–Aug. 2018*
M.S. in Electrical & Electronics Engineering — CGPA: 3.57 / 4.00.
Concentration: Electromagnetics, Microwaves and Antennas.
Thesis: Design and Implementation of VHF–UHF Antenna with Non–Foster Matching Circuit

Cankaya University, Ankara, Turkey — *Sep. 2010–Jun. 2015*
B.S. in Electronic & Communication Engineering (Valedictorian) — CGPA: 3.94 / 4.00.
Minor in Materials Science and Engineering (Sep.2013–Jun.2015) — CGPA: 3.02 / 4.00.

EXPERIENCE

Analog Devices, Inc. — *Jul. 2024–Present*
Senior Design Evaluation Engineer, High–Speed ADCs — *Wilmington, MA*

- Evaluation and characterization of high–speed ADCs and DACs for next generation transceiver products.
- Functional and performance evaluation of core technologies and calibration algorithms.
- Development of bench hardware and software to control and automate bench test equipment using Python.

Analog Devices, Inc. — *Jun. 2023–Sep.2023*
Product Engineering Intern – High–Speed DACs — *Wilmington, MA*

- Development of bench hardware and software to control and automate test equipment using Python.
- Evaluation of SFDR and IMD performance of high-speed DACs. Helped improve static and dynamic DAC calibration. Evaluated various DAC related blocks such as delay–locked loop circuit and data scrambler.

Analog Devices, Inc. — *May. 2022–Aug.2022*
Product Engineering Intern – High–Speed DACs — *Wilmington, MA*

- Development of bench hardware and software to control and automate test equipment using Python.
- Evaluation of SFDR performance of high–speed DACs over PVT. Performed and improved static and dynamic DAC calibration and delay–locked loop circuits.

Tufts University, Nanoscale Integrated Sensors and Circuits Lab. — *Sep. 2018–Jul. 2024*
Graduate Teaching/Research Assistant — *Medford, MA*

- Designed a low–power multiplexed analog front–end (AFE) for sensing applications.
- Designed and implemented ingestible sensing capsules comprised of 6–DoF IMU, temperature sensor, electrochemical pH/O_2 sensors and external EEPROM. Designed and implemented of various ingestible sampling capsules for targeted sampling in the GI tract. Implemented different sensing techniques and signal processing algorithms.
- Designed and implemented a miniaturized wireless heart and respiration rate monitoring system for small birds.

Middle East Technical University, Ayasli Research Center — *Oct. 2016–Dec. 2017*
Project Expert — *Ankara, Turkey*

- Designed and implemented a non–Foster impedance matching network using negative impedance converters for wire monopole antennas in VHF–UHF band.
- Designed and implemented broadband efficient monopole antennas using reactive loading concept with genetic algorithm. Designed different RF filters comprised of lumped elements that cover 146–512 MHz band.

TECHNICAL STRENGTHS

Programming Languages	C, C++, Python, Verilog/SystemVerilog, HTML5/CSS3.
Tools	Cadence Virtuoso/Genus/Innovus, Altium Designer, AWR Microwave Office, LTSpice, MATLAB/Simulink, LaTeX, MS Office.

PUBLICATIONS AND PATENTS

Sonkusale, S., Del-Rio-Ruiz, R. & **Asci, C.** (2025). Ingestible Biosensing Capsule with Integrated Thread-Based Sensors. US Patent App. 18/834,347. Link: https://patents.google.com/patent/US20250040891A1/en

Asci, C., Sharma, A., Del-Rio-Ruiz, R. & Sonkusale, S. (2024). A multiplexed sensing system with multimodal readout electronics and thread-based electrochemical sensors for high throughput screening, Electrochimica Acta, 501. DOI:10.1016/j.electacta.2024.144798

Sharma, A., **Asci, C.**, Marty, J.L. & Sonkusale, S. (2024). Wearable Biosensors on Sutures and Threads in Wearable Biosensing in Medicine and Healthcare, pp. 267-297. Springer Nature Singapore.

Riccio, R., **Asci, C.**, Zeng, W., Owyeung, R., Romero, M. & Sonkusale, S. (2024). Wireless Heart and Respiration Rate Monitoring in Birds Using Skin Mounted Eutectogel Coated Threads in Advanced Materials Technologies, 2400202. DOI:10.1002/admt.202400202

Asci, C., Sharma, A., Del-Rio-Ruiz, R. & Sonkusale, S. (2023). Ingestible pH sensing device for gastrointestinal health monitoring based on thread-based electrochemical sensors in Microchimica Acta, 190, 10. DOI:10.1007/s00604-023-05946-1.

Sharma, A., **Asci, C.**, Del-Rio-Ruiz, R., Trinidad, K., Hossain, N.I., Kaplan, D.L. & Sonkusale, S. (2023). Multiplexed Sensing Probe for Bioreactors for Cellular Agriculture. IEEE Sensors Letters, vol. 7, no. 8, pp. 1-4. DOI:10.1109/LSENS.2023.3300799.

Wang, W., **Asci, C.**, Zeng, W., Owyeung, R. & Sonkusale, S. (2023). A frequency-adjustable helical antenna using shape memory alloy in Applied Physics Letters. vol. 123, no. 4. DOI:10.1063/5.0154602.

Wang, W., **Asci, C.**, Zeng, W., Zeng, W. & Sonkusale, S. (2023). Zero-power screen printed flexible RFID sensors for Smart Home in Journal of Ambient Intelligence and Humanized Computing. vol. 14, no. 4, pp. 3995-4004. DOI:10.1007/s12652-022-04466-9.

Asci, C., Del-Rio-Ruiz, R., Sharma, A. & Sonkusale, S. (2022). Ingestible pH Sensing Capsule with Thread-Based Electrochemical Sensors in 2022 IEEE Sensors. pp. 1-4.

Das, R., Zeng, W., **Asci, C.**, Del-Rio-Ruiz, R. & Sonkusale, S. (2022). Recent progress in electrospun nanomaterials for wearables in APL bioengineering. vol. 6, no. 2. DOI:10.1063/5.0088136.

Asci, C., Sadeqi, A., Wang, W., Nejad, H.R. & Sonkusale, S. (2020). Design and implementation of magnetically–tunable quad–band filter utilizing split–ring resonators at microwave frequencies in Scientific reports, vol. 10, no. 1050. DOI:10.1038/s41598-020-57773-6.

Asci, C., Wang, W. & Sonkusale, S. (2020). Security monitoring system using magnetically-activated RFID Tags. 2020 IEEE Sensors. pp. 1–4. DOI:10.1109/SENSORS47125.2020.9278750.

AWARDS & SCORES

Tufts University	Full Scholarship, Sep. 2018–Jul. 2024.
Cankaya University	Graduated as Valedictorian in 2015. High Honor Student (2011–2015).
Test Scores	GRE Q: 170/170, TOEFL iBT: 103/120.

REFERENCES

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