N. Cameron Matson

Southern Methodist University
Department of Electrical and Computer Engineering
Dallas, TX
cmatson@smu.edu
(501) 516-1220
ncmatson.com

1. EDUCATION

Present **Doctor of Philosophy in Electrical Engineering**, Georgia Institute of Technology, Atlanta, GA
Advisor: Dr. Karthikeyan Sundaresan

2022 **Master of Science in Electrical Engineering**, Southern Methodist University, Dallas, TX
Advisors: Dr. Joseph Camp, Dr. Dinesh Rajan
Graduating: Summer '22
GPA: 4.00/4.00

2017 **Bachelor of Science in Electrical Engineering,** Southern Methodist University, Dallas, TX
Minor in Computer Science
Bachelor of Science, Southern Methodist University, Dallas, TX
Major: Mathematics
Bachelor of Arts, Southern Methodist University, Dallas, TX
Major: Music
GPA: 3.85/4.00, Cum Laude

2. RESEARCH

I. Topics

1. UAV-to-UAV/Ground wireless channel measurements, analysis, and applications
2. Machine learning/computer vision applications for joint communication and sensing.

II. Conference Publications

2022 **N. C. Matson**, D. Rajan, J. Camp, "Design and Analysis of Neural-Network-based, Single-User Codes for Multiuser Channels." 2022 IEEE Latincom.

N. C. Matson, J. Camp, D. Rajan, "Effect of Antenna Orientation and UAV Position on UAV Communications in 3D Space." 2022 IEEE Latincom. **(Best Paper Award Winner)**

M. Badi, **N. C. Matson**, D. Rajan, J. Camp, "Leveraging UAV Rotation To Increase Phase Coherency in Distributed Transmit Beamforming." 2022 IEEE 19th Annual Consumer Communications & Networking Conference (CCNC).

2021 **N. C. Matson**, M. H. Syed, S. Song, D. Rajan, and J. Camp, "Effect of Antenna Orientation on the Air-to-Air Channel in Arbitrary 3D Space." IEEE WoWMoM 3rd Workshop on Wireless Networking, Planning, and Computing for UAV Swarms (SwarmNet).

3. SKILLS

MATLAB, Python, C++, Linux, Machine Learning tools (TensorFlow, Keras, PyTorch), Software-Defined Radio (USRPS), GNU Radio, NI LabView/TestStand, Wireless Networks, Computer Vision, Image Processing, Lab Bench Testing, Experiment Design

4. SELECTED COURSES TAKEN

2022	Networked Control, Wireless Networks
2021	Advanced Information Theory, Machine Learning and Neural Networks, Cryptography and Data Security, Statistical Pattern Recognition
2020	Advanced Drone Communications, Adaptive Algorithms for Machine Learning, Embedded Wireless Design Lab, Fundamentals of Computer Vision
2017	Algorithms, Optimization in Wireless Networks, Matrix Computation, Antenna and Radiowave Propagation, Communication and Information Systems, Machine Learning in Python, Topics in Digital Signal Processing
2016	Mobile Phone Embedded Design, Data Structures, Electromagnetic Fields and Waves, Microcontroller Architecture, Scientific Computing, Linear Algebra, Solid State Devices, Statistical Methods in EE

5. PROFESSIONAL EXPERIENCE

2022-Present **Georgia Institute of Technology**, *Atlanta, GA*
Research Assistant, MARGA Research Group
Researching and building next generation systems for wireless communication and sensing

2020-2022 **Southern Methodist University**, *Dallas, TX*
Research Assistant, Wireless Research Group
Conducted research on UAV communication including in-flight field experiments, channel modeling, and application leveraging the unique characteristics of UAVs such as distributed beamforming. Also using machine learning to develop novel and secure wireless channel codes.

Fall '21 *Teaching Assistant, Intro to Wireless Communication*
Designed and led a lab-section introducing students to simulating and building wireless systems using MATLAB, GNU Radio, and SDRs (USRPs). Topics include digital modulation, signal synchronization and detection, OFDM, and MIMO.

Summer '21 **Griffiss Institute**, *Rome, NY*
Research Intern
Researched machine learning applications to multi-user wireless communication systems.

2017 – 2020 **Texas Instruments**, *Dallas, TX*

Feb. '19 – Oct. '20 *Battery Gauge Products,* Firmware Validation Engineer
Contributed to a new Test Automation Framework built using Python and NI hardware (PXI) and software (LabView, TestStand) which increase coverage while decreasing development time of new firmware on battery gauging technology products.

Feb. '18 – Feb. '19 *High Reliability Products,* Product and Test Engineer
Perform radiation and final test activities including: radiation test planning (to meet qualification), radiation test hardware design, automated final test programing and board design.

Summer 2017	*DLP (Digital Light Projection) Products,* Test Engineering Intern Built a .NET software application to automate the capture, analysis, and verification of critical internal control signals via an edge detection and clustering algorithm for the DLP technology.
Summer '16 & Summer – Fall '15	**L3 Communications,** *Greenville, TX* Hardware Product Development Intern, Co-op Designed, implemented, and debugged hardware/software functional test of military black box units
2014 – 2017	**Southern Methodist University,** *Dallas, TX* *Resident Life and Student Housing,* Resident Assistant *Altshuler Learning Enhancement Center*, Tutor
Youth	**Matson Inc. (General Contractors)**, *Little Rock, AR* Laborer, Son

6. HONORS AND AWARDS

2022	Best Paper Award – IEEE Latincom
2021	SMU Research Days Competition Winner – ECE Category
2017	Pi Kappa Lambda (music honors society)
2015	Alpha Chi (academic honor society)
2014	Tau Beta Pi (engineering honors society)
2013	SMU Second Century Scholar
	SMU University Honors Program
	Eagle Scout

7. SERVICE

LRCH Alumni Mentorship Program (AMP)

Volunteer as a one-on-one mentor with traditionally underserved students to help them take full advantage of the opportunities at my high school *alma matter*, especially as it relates to applying to college.