

JUN CAO

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Education

Chalmers University of Technology

Master of Information and Communication Technology

First-year GPA: 5.0/5.0

Relevant Coursework: Digital communication system; Antenna design & measurement; Remote sensing system

Gothenburg, Sweden

Sep.2024-Present

Southeast University, Chien-shiung Wu College (Honors College)

Bachelor of Science, major in Information Science and Engineering

Overall GPA: 3.93/4.0

Main Honors: *National Scholarship* (2021); *Tong Ren Ding Scholarship* (Corporate-sponsored, 2022)

Nanjing, China

Sep.2020-Jun.2024

Publication

Wei Xue, Yixiang Huang, **Jun Cao**, YuCheng Yu, FeiFei Hui, Chao Yu, "Dynamic Matching Power Amplification Technique for Transmitting Time-Variied Signals With Large Modulated Bandwidth and Frequency Range," in *IEEE Transactions on Microwave Theory and Techniques*, 2024. [[Paper Link](#)]

Main Contributions:

- Developed and authored the core section of the paper, focusing on the design and implementation of an LMS-based adaptive FIR filter. The algorithm successfully generated dynamic matching control signal for power amplifiers during real-time laboratory testing.
- Illustrated research concepts and system architectures by designing and creating key figures and block diagrams for the publication.

Research Experience

Data-driven speech recovery in a fiber-optic polarization-based sensing system

Verilog, MATLAB, Python

Sep.2025-Present

- The main research question is *to what extent can an acoustic signal be reconstructed at the optical communication receiver.*
- Expected to simulate the fibre-optical communication system and implement a data-driven speech recovery algorithm.

Digital predistortion linearization technology of power amplifiers and FPGA implementation

Verilog, MATLAB, Python

Sep.2023-Jun.2024

- Completed Verilog implementation of GMP and MP models of digital predistortion with *Xilinx Zynq UltraScale+ ZCU102 Evaluation Kit.*
- Finished the overall simulation of digital predistortion in MATLAB using various models and expanded the test scenario to broadband test signals (200MHz 5GNR).

Design of 5G millimeter wave massive MIMO beam measurement system

C++, MATLAB

Sep.2022-Jun.2023

- Developed and tested a software platform suitable for joint simulation of turntables, antennas and various measuring instruments based on MATLAB.
- Learned the basic knowledge of antennas and important parameters for measuring antenna performance and gained experience in laboratory measurement.

Professional Experience

Project Assistant Intern

Jun.2025-Aug.2025

Department of Space, Earth and Environment, Chalmers University of Technology

- Resolved software incompatibility issues of a proprietary remote sensing application (C++, Delphi, Pascal, developed with RAD Studio) for Windows 10 and 11, originally developed on Windows 7.
- Contribute to extensive laboratory tests for various real-time online devices to ensure software stability and reliable performance.
- Developed an open-source, desktop application submodule for compressing and extracting random Flags, available at [[GitHub Link](#)].

International Student Ambassador

Oct.2024-Present

Chalmers University of Technology

- Created and managed engaging content for student social media platforms, including 8 blogs and 5 Instagram Reels, participating in daily social media operation.
- Managed online communication platforms for the MPICT project, aiming to facilitate public understanding of the university and its related programs.

Selected Course Projects

RF Circuit Modeling and CAD with Systemvue

Keysight & Southeast University joint course

Sep.2022-Jan.2023

- Joint simulation of Systemvue software and MATLAB to implement digital predistortion of balanced power amplifiers using various models.
- Second place among 12 groups in the final project assessment.

Comprehensive circuit system design: Phase-locked loop circuit simulation

Verilog AMS, C++, Python

May.2022-Jun.2022

- Implement basic signal simulation in MATLAB Simulink.
- Design the phase-locked loop circuit in Cadence Virtuoso, combined components such as VCO and Frequency Detector in the form of a circuit and completed the simulation and optimization goals.

Extracurricular Activities

Chairman of Student Union of Chien-shiung Wu College, Southeast University

Sep.2022-Sep.2023

Skills & Interests

Programming Languages: MATLAB (fluent), Verilog, Python, C/C++

Engineering Software: Vivado, Quartus, Multisim, ADS, Systemvue, Cadence Virtuoso

Systems: Linux, Mac, Windows

Interests: Flim, Music, Jogging