Chiachia **Lee**

Telecommunications and Cybersecurity Engineer

Personal Information

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Languages

Mandarin	C2	Native
English	C1	● ● ● ● ●
German	B1	● ● ● ○ ○

Programming & Framework

- **C/C++**
- **Python**
- **NumPy**
- **SciPy**
- **PyTorch**
- **MATLAB**
- **Java**
- **SQL**

Signal Processing & Telecom

OFDM/3GPP NR
Turbo/LDPC/Polar Codes
MIMO/Beamforming
Link-Budget&Spectrum Mgmt
GNSS&LEO Satellite
5G/6G System-Level Analysis

Cybersecurity

Threat Identification
Cryptographic Protocols
Network Packet Analysis
Pen-Testing (Nmap/Metasploit)

Machine Learning & AI

Reinforcement Learning (RL)
Proximal Policy Optimization (PPO)
Neural Networks/Deep Learning
Supervised & Unsupervised Learning

Education

2021 – now | **RWTH Aachen University**
Master of Science in Electrical Engineering, Information Technology and Computer Engineering — Germany
Master Thesis : Coexistence Analysis in Terrestrial Networks and Non-Terrestrial Networks

2014 – 2018 | **Chung-Cheng Institute of Technology**
Bachelor in Electrical and Electronic Engineering — Taiwan
Bachelor Thesis : GSM Sniffing and Base Station Emulation
GPA : 81.31%

Experience

2018 – 2020 | **Electrical Warfare Operation Center**
Frequency Control Department Engineer — Taiwan
Spectrum Monitoring & Regulatory :
Managed allocation of military and civilian device licenses across national 0 - 300 GHz spectrum table. Using link-budget and system-level interference analysis for spectrum allocation.
Interference Analysis & Inter-System Interference Resolution :
Real-time monitored national-wide spectrum. Detected and geolocated unauthorized emitters or enemy devices. Especially focused on military and civilian aviation frequency to maintain airborne-communication.

Tools & Develops

Git/GitLab/GitHub	● ● ● ● ○	**IDA Pro/Nmap**	● ● ● ● ○
VMware/VirtualBox	● ● ● ○ ○	**MATLAB& Simulink**	● ● ● ● ●
LabVIEW/SPICE	● ● ● ● ○	**Wireshark/GNURadio**	● ● ● ● ●

Projects

2024 | **Software Defined Radio (SDR) System**
Built end-to-end SDR chain in LabVIEW and USRP. Implemented binary-source encoding, preamble-based synchronization, frame detection, QPSK/QAM modulation, RF up/down-conversion, demodulation, frame recovery, and binary decoding

2024 | **Broadband Service in LEO Satellite Constellations**
Analysis LEO constellation broadband service and evaluated Co-Channel and intra-system interference, weather attenuation, and discuss the trade-off between coverage and interference.

2022 | **Machine Learning for Satellite Networks**
Implemented ML-based channel estimation and detection in MATLAB: trained neural-network estimators on designed non-terrestrial network channel. Integrated models into simulation workflows to secure a desired throughput gain under high-Doppler conditions.

2022 | **Satellite Navigation System Simulation**
Built a MATLAB GNSS framework. generated GPS L1 C/A signals, executed PRN-code acquisition, carrier-phase tracking (DLL/PLL), navigation-message decoding, and PVT estimation—delivering horizontal positioning accuracy within 10 m on live GNSS captures.