Ning An

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Southeast University, Nanjing, China

SUMMARY

I am a third-year undergraduate student majoring in Computer Science and Technology at Southeast University, advised by Professor Shuai Wang. My research interests focus on wireless system and machine learning. My current research specializes in RF signal processing (WiFi, ZigBee, etc.) and brain signal processing.

EDUCATION

• **Southeast University** *Sep. 2022 – Present*
B.E. in Computer Science and Technology Nanjing, China
◦ **GPA:** 3.92/4.0 **Average Score:** 91.42/100 **Rank:** 4/106

PUBLICATIONS

[C1] Shuai Wang, **Ning An**, Shuai Wang, Weiwei Chen and Xianjun Deng. **CTx: A Concurrent Transmitter for Heterogeneous IoT Communication**. *In submission*

[C2] Yike Wu, **Ning An**, Zixuan Zeng and Youyong Kong. **Hierarchical Spatiotemporal Attention Network for Fine-grained Brain Cognitive State Recognition**. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*. 2025.

RESEARCH EXPERIENCE

• **Research on PHY-layer for ISM Band Wireless Communications** Southeast University
Research Intern, advised by Prof. Shuai Wang Nanjing, China
CTx: A Concurrent Transmitter for Heterogeneous IoT Communication *Dec. 2023 - Present*
◦ Investigated the problem of decreased spectrum utilization efficiency in heterogeneous IoT, which is a challenging issue due to the fundamental incompatibility in heterogeneous IoT PHY layers.
◦ Proposed a novel heterogeneous signal concurrent transmitter, capable of transmitting WiFi and ZigBee to the commodity WiFi and ZigBee devices concurrently, thereby enhancing the spectrum efficiency and throughput of the wireless network.
◦ Presented an innovative concurrent modulation algorithm exploiting the inherent bit robustness and other features in physical layer, enabling simultaneous transmission of WiFi and ZigBee on overlapping frequency bands without packet loss.

• **Research on Spatiotemporal Attention Network for Brain Signal Decoding** Southeast University
Research Intern, advised by Prof. Youyong Kong Nanjing, China
Hierarchical Spatiotemporal Attention Network for Fine-grained Brain Cognitive State Recognition *Oct. 2023 - Nov. 2024*
◦ Designed a static-dynamic encoding structure to extract information of the brain from BOLD-fMRI signal, and use spatiotemporal cross attention to achieve information fusion of different modalities.
◦ Proposed a hierarchical guided brain cognitive state recognition model, which uses coarse-grained cognitive domain labels to guide the training of specific models under each domain to predict the fine-grained brain state.

HONORS AND AWARDS

• National Scholarship (top 5%) 2024
• The Southeast University President Scholarship (top 2%) 2023
• Excellent Student Cadre 2023 & 2024
• Cyrus Tang Caring Heart Scholarship 2022

SKILLS

• **Programming:** C, C++, Python, Matlab, LaTeX, Java
• **Software & Platform:** Matlab, GNU-Radio, Pytorch
• **Language:** English (fluent), Chinese (native)