RESUME

Xiaofeng ZHOU

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Education

Southeast University *Nanjing, China*

Bachelor of Information Science and Technology (Honor). GPA: 3.847/4.8, Ranking: 15/114. *Sep. 2016 - Jun. 2020 (Expected)*

- **The Hong Kong Polytechnic University**, Hong Kong, China — *Semester Abroad Fall 2017*

Academic and Industrial Experience

National Mobile Communication Research Laboratory *Nanjing, China*

Research Assistant *Dec. 2016 - PRESENT*

- Group: Lab of Efficient Architecture for Digital-communication and Signal-processing.
- Focused on research work related to the **hardware implementation of polar codes**.
- Helped the establishment of the **C++ simulation platform on polar codes**.
- **Proposed a hybrid decoding algorithm** for polar codes and corresponding hardware architecture. The latter is implemented in Verilog.
- Built the hardware architecture in project 'polar code with memory'.

Nanjing IC Industry Service Center *Nanjing, China*

Student of an Industrial Training Project about FPGA *July 2018*

- Helped finish the project 'PYNQ based digital circuit and signal processing'.

Publications

Conference Papers

Oct. 2018

X. Zhou, Y. Shen, X. Tan, X. You, Z. Zhang and C. Zhang, "An Adjustable Hybrid SC-BP Polar Decoder," *2018 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS)*, Chengdu, 2018, pp. 211-214.

Dec. 2017

Y. Shen, J. Yang, **X. Zhou**, X. You and C. Zhang, "Joint Detection and Decoding for Polar Coded MIMO Systems," *GLOBECOM 2017 - 2017 IEEE Global Communications Conference*, Singapore, 2017, pp. 1-6.

Jul. 2019

Q. Liu, **X. Zhou**, S. Zhang, Z. Zhang, X. You, Y. Shen, and C. Zhang, "Efficient Overlapped and Interleaved Successive Cancellation List Polar Decoders for IoT," *IEEE International System-on-Chip Conference*, Singapore, 2019, Accepted.

National Patent

Under processing, application number: 201811220289.2 *Oct. 2018*

SC-BP hybrid decoding algorithm for polar codes and corresponding flexible hardware architecture

Competition Awards

2018-2019 IEEE CASS Student Design Competition *Sapporo, Japan*

Winner in Asia and Pacific *Nov. 2018 - May 2019*

- Project: Neural Network based Wireless Vision Detection System.
- Played the role of the team leader.
- Established a wireless system that realize the **neural network based image detection for real-time tasks**.
- Reduced the power consumption at the front end sampler via the wireless communication technique.

SEU Smart Car Competition 2018

Second Prize of School Level (18 out of 208 teams) *Apr. 2018*

- Helped design a navigation algorithm on the smart car platform to enable the car to navigate itself according to the electromagnetic environment on the track.

Mathematical Contest in Modelling

Honorable Mentions *Feb. 2018*

- Proposed a mathematical model for estimating the trends of global languages by observing the users of 20 major languages.
- Was responsible for the Matlab simulation of proposed algorithms.

SEU Electronic Design Competition 2018

Third Prize of School Level (32 out of 183 teams) *Jun. 2018*

- Realized the frequency and phase synchronization algorithm of two DC motors via STM32F107 in order to keep balance of the board bearing the two motors.

China Computer Design Competition 2019 (AI challenge match)

National Second Prize *May 2019*

- Project: Neural Network based Bladder Tumour Detection System.
- Built a training and judging system for the grading of bladder tumours via **Keras**.

Projects

The research on large-scale sparse system oriented to future wireless communication

National innovation project for undergraduate students *May 2018 - May 2019*

- The project includes the research on space modulation, turbo signal recovery in compressed sensing and decoding algorithm of polar codes.
- Was responsible for the research on decoding algorithms and corresponding hardware architecture for polar codes.

Design of CPU architecture based on Verilog

Course project of Computer Organization and Architecture (COA) *Mar. 2019 - May 2019*

- Implemented a simple CPU via verilog language on Xilinx Artix-7 FPGA, including Arithmetic and Logic Unit (ALU), control registers and Micro Control Unit (MCU).
- The CPU Supports the integer arithmetic operations and jump process.

Design of BPSK modulation and demodulation system on ZYNQ platform

Course project *Mar. 2019 - May 2019*

- Implemented a BPSK communication system on ZYNQ using Verilog language, including the BPSK modulator and Costa receiver.
- Synchronized phase between the transmitter and receiver using a feedback loop.

Behavioural Modelling for Digital Pre-distortion of RF Power Amplifiers

Course project of RF Circuit Modelling & CAD *Mar. 2019 - May 2019*

- Established behaviour model for digital pre-distortion of radio frequency power amplifiers via *SystemVue*.
- Applied reverse fitting in order to minimize error of the whole system due to PA non-linearity.

Social Experience

- Member of Chine-Shiung Wu College Student Union. *Sep. 2016 - Jun. 2017*
- Reporter and broadcaster of Southeast University Radio Station. *Sep. 2016 - Jun. 2017*
- Member of Southeast University Robot Club. *Sep. 2016 - Jun. 2017*

Scholarships and Awards

Major Award of ZhongNan Scholarship. (10,000CNY)

May 2019

APCCAS2018 Travel Grant. (1,500CNY)

Oct. 2018

Outstanding Student in Academic. (Top 3% in Southeast University)

Jan. 2019

Student awards in certain courses. (500CNY each course, Top 5%, till semester 17-18-3)

Sep. 2017 and Sep. 2018

- Signal and System (98)
- Algorithm and Program Design (98)
- Mathematical Analysis (I) (93)
- Micro Computer Systems (92)
- Electromagnetic Field (92)
- Physics (I) (90)