Zhihao **Zhou**

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Burgwal 21, 2611 GE, Delft, the Netherlands
Born on **Mar. 10, 1992** in **Shandong, China**

Education

Nov. 2017 | **M.Sc. in Electrical Engineering**
Delft University of Technology, Delft, the Netherlands
Major in Microelectronics, graduate with honor (Cum Laude)

Jun. 2014 | **B.Eng. in Electronic Science and Engineering**
Southeast University, Nanjing, China
GPA : 88/100

Internship

Sept. 2017 – Aug. 2016 | **Master Thesis Intern, imec, Eindhoven, the Netherlands**

- Title : a digital-intensive wakeup timer based on an RC frequency-locked loop for Internet of Things (IoT) applications
- Proposed a novel ultra-low-power oscillator architecture to fully exploit the small area and low supply voltage advantages in advanced CMOS processes
- System-level modeling with MATLAB to estimate stabilities of the oscillator w.r.t. temperature, supply and noise
- Transistor-level implementation in Cadence and tape-out in TSMC 40-nm CMOS
- Measurements show the oscillator has the lowest supply voltage, the highest energy efficiency, and comparable stabilities w.r.t. the state-of-the-art

Analog/Mixed-Signal | Ultra-Low Power | Oscillator | MATLAB | Low Noise | Cadence | Layout | Measurement | Git

Aug. 2015 – June 2015 | **Intern, Changzhou Research Institute of Zhejiang University, Jiangsu, China**

- Explored control algorithms in smart car systems
- Adapted the Kalman Filter into the navigation system of the car using data from multiple sensors, e.g., gyroscope and accelerometer
- Collaborated with other colleagues in the PCB design of the hardware

Control System | Embedded System | MATLAB | PCB | Team Collaboration

Project Experience

June 2016 – May. 2016 | **All Digital Phase-Locked Loop (ADPLL)**

- Course project of Digital RF
- Learned knowledge about digital RF and frequency synthesis
- Built a time-domain model of the ADPLL based on its phase operation
- System-level design with the model for behavior-level noise simulation in using MATLAB

Digital RF | ADPLL | Frequency Synthesis | Modeling | MATLAB

May. 2016 – Apr. 2016 | **Transistor Fabrication**

- Course project of IC-technology lab.
- Learned basic CMOS fabrication steps and their physical mechanisms with a 1-μm Bi-CMOS process in Else Kooi Lab at Delft University of Technology
- Simulation and hands-on operation of the fabrication of MOS transistors in a clean room
- Lab measurement of the fabricated transistors using a microscope and a probe station

CMOS process | Simulation | Fabrication | Clean Room | Measurement

Mar. 2016 – Feb. 2016 | **Audio Amplifier Design**

- Course project of Analog CMOS Design
- Designed a class-AB amplifier architecture to handle a low-ohmic load with a rail-to-rail swing
- Implemented the amplifier using LTspice in 0.18-μm CMOS, and it achieved a high SNR, a high SFDR, and a low IM3
- Optimized the gain and phase margins of the amplifier to achieve a stable operation within the given bandwidth

Analog Design | Amplifier Design | Low Noise | Stability Margins | LTspice

Jan. 2016
Dec. 2015

Time-to-Digital Converter (TDC)

- Course Project of Digital IC Design
- Designed a 10-bit TDC with a 4-bit delay line and a counter to save area and power
- Implemented the TDC using Cadence in UMC 90-nm CMOS, and it achieved a worst-case 27-ps resolution with both DNL and INL smaller than 1 at every process corner
- Optimized the area of the TDC in the layout

Mixed-Signal Design | TDC | Corner Simulation | Layout | Cadence

Dec. 2015
Nov. 2015

Low-Noise Amplifier (LNA)

- Course project of Microwave Circuit Design
- Learned impedance matching, stability, and noise figure in microwave/RF designs
- Designed a CMOS LNA with an inductive degeneration for simultaneous input noise and impedance matching using ADS
- Designed the corresponding output matching network of the LNA to achieve stability

Microwave/RF Design | LNA | Matching Network | Stability | ADS

May. 2014
Mar. 2013

Micro-Electro-Mechanical System (MEMS) Magnetic Sensor

- Student research project at Ministry of Education Key Lab. of MEMS, funded by National Science Foundation of China (No. 61201032)
- Designed a two-dimensional MEMS magnetic sensor in collaboration with other students using ANSYS
- Simulation and optimization of the sensor under various electrical and magnetic (EM) conditions and at process corners
- Resulted in two patent applications

MEMS | Sensor | Team Collaboration | Modeling | Simulation | ANSYS

Extracurricular Activity

Aug. 2013
July 2013

Trainee, Xilinx Summer School, Nanjing, China

- Innovation training program organized by Xilinx in Southeast University
- Learned industrial project development and management skills
- Conducted a smart car project using a FPGA/ARM platform in collaboration with other trainees

Project Development | Project Management | Team Building | Verilog-HDL | C | FPGA | ARM

June 2012
June 2011

Member, Red Cross Society of Southeast University, Nanjing, China

- Responsible for advertising organization events by making posters, flyers, etc.
- Planned and organized volunteer activities, and received a considerable amount of positive feedback

Volunteer Work | Time Management | Communication Skills | Coordination Capabilities

Professional Skills

Development Tools : Cadence, LTspice, ADS, Vivado, Quartus II, Altium Designer, ANSYS, Git
Programming Languages : Verilog-HDL, VHDL, C/C++, MATLAB, Python
Operating Systems : Windows, Linux, macOS
Miscellaneous : Team Collaboration, LaTeX, Microsoft Office, Computer Maintenance

Language

Mandarin ●●●●●
Dutch ●○○○○
English ●●●●○

Awards

2013	Scholarship of Suzhou Industrial Park	2%
2013	2nd Prize in 12th Structure Innovation Competition	5%
2013	Meritorious Winner in 7th Freescale Smart Car Competition	10%
2012	Outstanding Student of Southeast University	1%