Ruicong Chen

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RESEARCH INTERESTS

Mixed Signal CMOS Circuit ASIC Design: Bidirectional Neural Recording, In-memory Computing for Neural Network Algorithm Hardware

EDUCATION

PEKING UNIVERISTY JUNIOR UNDERGRADUATE Beijing, China

Bachelor of Science and Engineering in Microelectronics *Sep 2015–Jul 2019(expected)*

- **Academic:** Overall GPA 89/100 (3.73/4.0), Major GPA 91/100 (3.86/4.00), **ranking 1st**
- **Honors and award:**
  National Scholarship (Top 1%) (23/10/2017), YEON Scholarship (Top 5%) (21/10/2016),1st Prize, 33th National Physics Competition of Undergrad (5/6/2016)
- **Core Curriculum:**
  Principles of Analog Integrated Circuits (98)
  Principles of Digital Integrated Circuits (94)
  Advanced Analogue CMOS Circuits Design (91)
  Fundamentals of Modern Wireless Communication Integrated Circuits (92)
  Integrated Circuit Design Laboratory (94)
  Analog Circuit (97)
  Digital Circuit (89)
  Principle of Circuit Analysis (86)
  Basics of Solid State Physics (93)
  Semiconductor Device Electronics (90)
  Semiconductor Physics (88)

TECHNICAL SKILLS

Programming Skills: C/C++, Matlab & Simulink, Verilog
Circuit Design Packages: Cadence (virtuoso ic6), ISE design suit FPGA, SPICE, PCB(known)

RESEARCH EXPERIENCE

CMOS Circuit Design of Bidirectional Close-loop Neural Probe circuits

Austin, USA

Sun Research Group, ECE Department, University of Texas at Austin

June 2018 – September 2018

Supervisor: ***Nan Sun***

- Read relevant papers and familiar with the current state-of-art circuits implementation to cancel differential artifact which is common in bidirectional neural recording

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- **Come up with a new loop control algorithm to fast recover from artifact. Recovering time is reduced by half compared to ISSCC 2018 Chul Kim's PDA work.**
- **Verify the fast recovery technique in Simulink Matlab.**
- Preparing for transistor level simulation in Cadence Virtuoso(ic6) and conference & journal submission

CMOS Circuit Design of PWM signal controlled LED circuits Beijing, China

Key Lab of Microelectronic Devices and Circuits, Peking University *Jan 2018 – March 2018*

Supervisor: ***Wengao Lu***

- Familiarized the basic principles of PWM signal controlled LED circuits and read relevant papers to get familiar with clock recovery technique.
- Use technique to design the system and circuits specified PWM signal controlled LED circuits.
- Simulate the digital block for PWM signal generating.
- **Draw the layout of the circuits and tape-out in May 2018**
- Preparing for measurement

CMOS Circuit Design of Large Scale Infrared Detectors Readout Circuit Beijing, China

Key Lab of Microelectronic Devices and Circuits, Peking University *Nov 2017 – Jan 2018*

Supervisor: ***Wengao Lu***

- Familiarized the basic principles of infrared detectors and readout circuit and read relevant papers to get familiar with special layout technique for anti-radiation circuits
- Use technique to design the system and circuits specified for anti-radiation circuit.
- Simulate the row selecting module and column selecting module with cadence ic6 especially the Decoder
- Draw the layout of Decoder in CMOS technology using the gate around layout technique to avoid leakage caused by radiation.