Runpeng GAO

Phone: 86-15150567768 E-mail: rppgao@gmail.com
Address: 3-1-1101, Rulin Yaju, Qinhuai District, Nanjing, Jiangsu, China, 210000

EDUCATION

Nanjing University (NJU) Nanjing, China

- Master of Electronic Information 09/2020-06/2023

  GPA: **3.59**/4 Rank: **5**%

Nanjing Normal University (NNU) Nanjing, China

- Bachelor of Engineering, Electrical Engineering & Automation (Sino-British Cooperation) 09/2016-06/2020

  GPA: **3.57**/4 Rank: **4**%, **4**/95

Northumbria University Newcastle, UK

The English Language & Cultural Learning Programme GPA: **87**% 07-08/2018

PUBLICATIONS & PANTENTS

Hearing Loss Identification by Wavelet Entropy and Cat Swarm Optimization, **Runpeng GAO,** John Liu

February 2019 AIP Conference Proceedings 2073(1):020082; DOI:10.1063/1.5090736

Conference: ADVANCES IN MATERIALS, MACHINERY, ELECTRONICS III: 3rd International Conference on Advances in Materials, Machinery, Electronics (AMME 2019)

13 Chinese National Invention Patents, 1 American Patents (Checking)

1. Mini-LED Driving Method and Display System. CN113851080A. 2021. link
2. Mini-LED Backlight Driving Control Chip and System Supporting Breakpoint Resume. CN113838414A. 2021. link
3. LED Driving Current Modulation Method and System and Application. CN113554980A. 2021. link
4. Shadow Elimination Voltage Level Control Method, Display Method, System and Display Device. CN113314072A. 2021. link
5. Clock Duty Ratio Trimming Method and System. CN113162586A. 2021. link
6. Clock Duty Ratio Calibration Method and System. CN113014229A. 2021. link
7. Driving Method and Device of Display Element. CN112908244A. 2021. link
8. LED Driving Method, LED Driving Circuit and Display Screen. CN112735326A. 2021. link
9. Active Clamping Circuit. CN111831045A. 2020. link
10. LED Display Screen Row Driving Chip Driving Method and Chip. CN111724727A. 2021. link

Please refer to: https://rppgao.github.io/

RESEARCH EXCPERIENCE

12 Bit SAR ADC Design, *Project Leader*, 08/2022-Present

- Complete the design of a 12-bit high precision SAR ADC with an internal integrated clock (PLL).
- Design the overall structure of the unit, including the design of the bandgap reference module, the SAR ADC module, and the PLL module.
- Design digital methods to reduce offset; avoid misjudgment and reduce offset through the design of CDAC and digital signals.

1-2048x Programmable Gain Amplifier PGA, *Project Leader*, 05/2022-08/2022

- Complete the design of 1-2048x programmable gain amplifier PGA with DC offset cancellation (DCOC).
- Design the overall structure of the unit, including a fully differential operational amplifier, feedback loop, and designing the digital DC offset elimination method.

64 Sweep PWM Constant-current LED Drive Control Chip with Built-in SRAM HX8864, directed by Li Li, 05/2021-08/2022

Content:

- HX8864 is a LED high-density full-color screen dedicated driver chip, which supports 1 to 64 sweep 16 channel PWM constant-current output.

- The project adopts the technology of SMIC 55nm (taped out) and GF 130nm (taped out), and has completed engineering batch testing and mass production.

Responsibilities:

- Designed and verified the bandgap reference module with offset cancellation, LDO module, BIAS module, gain regulator module, and buffer module.
- By digital selection and trimming, realized the flexible adjustment of the gain adjustment module to the output current; designed a dynamic DAC structure to replicate the current accurately.

Small Spacing 8-channel Adjustable Serial Shadow Elimination Voltage LED Display Driver Control Chip HX6158H, directed by Li Li, 07/2020-04/2021

Content:

- HX6158H is a single-chip high-current with an output 8-channel serial LED display driver chip.
- The project adopts TowerJazz 180nm technology (taped out), and has completed engineering batch testing and mass production.

Responsibilities:

- Designed and verified the bandgap reference module, logic control module and driver module.
- Integrate functions of charge-discharge, voltage regulation and over-voltage protection inside the drive module.
- Eliminated the shadow phenomenon of the scan screen by adjustable voltage.
- Improved the caterpillar phenomenon caused by LED leakage and short circuit.

Irradiation-resistant Satellite Internet Interface Chip, directed by Li Li, 03-06/2020

Content:

- A chip which is applied in image sensor interface circuit system for satellite laser communication.
- The project adopts SOI 130nm 180nm technology (taped out), and has completed engineering batch testing and mass production.

Responsibilities:

- Designed and verified the simulation of LDO module; the module included level conversion, power-on self-start, and high and low-voltage protection functions.

INTERNSHIP EXPERIENCE

Intern Analog Design Engineer, Nanjing Huanxuan Semiconductor Co., LTD, 03/2020-Present

- Take charge of analog integrated circuit design; master professional software, such as Cadence.
- Cooperate with the senior engineers; do some in Chip wire bonding and packaging jobs.
- Take charge of the whole part of HX6158 and some important circuits in HX8864.

AWARDS & CERTIFICATES

First Class Scholarship for Graduate Students, NJU	09/2021
Certificate of Completion Tanner Analog & Mixed-Signal IC Design, Chinese Academy of Sciences	10/2020
Second Prize of Jiangsu Province, National Undergraduate Electronics Design Contest	09/2019
First Prize of Outstanding Student Scholarship, 4 times, NNU	2018-2019
Second Prize in Electronic Design Competition, 2 times, NNU	2018-2019
Second Prize of Outstanding Student Scholarship, NNU	11/2018
Scholarship of Nari Group, 2 times, NNU & Nari Group	2017-2018
Advanced Individual Award, College Students' Summer Social Practice, 2 times, NNU	2017-2018
Second Prize, Mechanical Drawing Contest, 2 times, NNU	2016-2017

PROFESSIONAL & COMPUTER SKILLS

Proficient in Cadence analog circuit design, simulation, layout and verification; AMS digital-analog mixed register verification; Mentor layout design verification; Linux system operation and configuration; Verilog.