jeremy199690@gmail.com

+31613519150

Antwerpen Belgium

WWW: [Bold Profile](#)

Skills

- CAD tools: Cadence Virtuoso, Calibre, ADE
- Programming: Basic knowledge in Python, Matlab and C

Personal Information

- Nationality: Taiwanese
- Date of birth: 09/11/1996

Indexterms

- CMOS image sensor
- Analog design
- Circuit design
- Materials science
- Quantum dots (QDs)

Languages

Chinese (Mandarin): First Language

English: C1

Advanced (C1)

French: B1

Intermediate (B1)

Dutch: A2

Elementary (A2)

Yu-Chieh Tai

Profile

I hold a Master's degree from EI group of Electrical Engineering department in TU Delft, Netherlands, and possess over two years of experience in transistor-level design, specifically within the analog front end of CMOS image sensors and analog IP blocks. In my previous role, I focused on the design of various IP components, particularly **temperature sensors, LDOs, bandgap references, and biasing blocks**. Additionally, I was responsible for designing **row drivers for high-speed image sensors**.

My master's thesis, titled "On-chip Temperature Compensation with a Reference Voltage Method for CMOS Image Sensors," involved designing a **bandgap reference** with innovative functionalities aimed at mantaining image sensor performance under temperature variations. This project culminated in a chip tape-out, providing me with comprehensive experience across the full design flow, including specification development, schematic creation, and layout design.

Professional Experiences

Gpixel - Analog Design Engineer
Antwerp, Belgium
06/2023 - 10/2024

- Tape out 1 CMOS image sensor IC
- Experience in block-level analog design including LDO, Bandgap Reference, Biasing block, row drivers, and temperature sensor

National Tsing Hua University - Assistant Researcher
Hsinchu, Taiwan
09/2019 - 12/2019

- Investigate the potential of QDs to improve the performance of color filters in the lab.
- Develop and improve the polymer glue in the QDs-based color filter.

Hsinlight CO., LTD - Assistant Process Engineer
Hsinchu, Taiwan
08/2019 - 09/2019

- Develop and improve the industrial, mass production for QDs.

Education

11/2022
M.Sc.:
Microelectronics, Electrical Engineering
Technische Universiteit Delft(TU Delft)

Delft, Nederlands

06/2019
B.S.:
Material science and engineering
National Tsing Hua University(NTHU)
Hsinchu, Taiwan

Project Implementation

- **IP blocks for high-speed CMOS image sensor (Industry)**: LDO, biasing block, row drivers, and temperature sensor
- **On-chip Temperature Compensation with a Reference Voltage Method for CMOS Image Sensors (Master thesis)**: Design of a bandgap reference block to sensor performance against temperature variations with full design (schematic, layout...)
- **Time to digital converter (TDC) two-step, coarse-fine TDC (class project, master)**: Design a TDC with a paper as prototype to reach the required specifications.
- **Switched capacitor power converter (SCPC) (Class project, master)**: Design and analyze the SCPC with a paper as prototype. Design an appropriate capacitor ratio and investigate the difference between theory and simulation results.
- Binary network hardware design project: Python and VHDL work (Class project, master): Design and improve and machine learning image recognition program with VHDL and a binary network. I wasresponsible for design testbench and code integration.
- Strategy to enhance the absorbability and increase the emitting light in QDs color filter (Bachelor)
- RGB QLED device prepared by inkjet printing with mixed solvent and optimized printing route (Bachelor)

Awards

- 2017 Excellent Academic Award, First Semester in Sophomore, Top 5 % in the department of MSE in NTHU
- 2017 Materials Research Society-Taiwan 1st Materials Knowledge Contest, 4th place honor, Competition of Materials knowledge in Introduction of Materials Science & Engineering
- 2018 Corning Future Innovator, Taiwan, Merit Award, Innovation contest for students in the field of engineering and industrial design with the participation of 300+ teams from 50+ universities in Taiwan
- 2018 Contest of Poster Presentation in Department of MSE, Winning Award, Over 50 participants from different grades and top 4 poster presentations.
- 2019 Material Research Society (MRS), Phoenix, AZ, USA, Spring Meeting, Poster Section, the first presenter