# YONGJUN HE

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## EDUCATION

**Sun Yat-sen University**                                                                                  Guangdong Province, China
Junior Bachelor in School of Microelectronics Science and Technology                  September 2020 – Present
- GPA: 3.9/4.0 Rank 3/80; admitted on basis of performance on the National College Admissions Exam (651/750)
- TOEFL: 95 (Reading:28 Listening:26 Speaking:23 Writing:18)
- Outstanding Classes: Calculates (96/100 16/154), Analog circuit (95/100 3/84), Analog IC (96/100 2/85)

## HONORS AND AWARDS

- China National Scholarship (top 0.2% among Chinese Bachelors)                                     2021
- The First Price Scholarship (top 5% among Bachelors in Sun Yat-sen University)           2020,2021
- The Zhuhai Megain Scholarship (top 3% among Bachelors in MST department)                  2020

## SELECTED RESEARCH AND PROJECTS

**Analysis and optimization of the Low Power front-end Multi-band RF Transceiver**
Research Assistant to Associate Professor Gengzhen Qi (Sun Yat-sen University)              August 2022 – Present
**(Supported by the National Nature Science Foundation of China (NSFC) under Grant:62104263)**
- Proposed a brand-new LTV method used to analyze and model the Gain-boost N-Path Transceiver independently.
- Used transmission gates, fully-differential baseband TIA, complex-poles network in a 4-Path mixer-first receiver and apply the LTV method to analyze the receiver.
- Achieved 22.2 dBm OOB-IIP3 at 80 MHz frequency offset, 4.1 dB NF with 25 MHz BW consuming a reasonable power of 57 mW in post-layout simulation individually.

**Simplified and Fast Analysis Algorithm for Vary Large-Scale Integration RC Network**
Research Assistant to Associate Professor Zhong Guan (Sun Yat-sen University)               April 2022 – July 2022
- Proposed an Arnoldi-based Algorithm to solve large-scale RC equations in complex VLSI networks.
- Utilized the Krylov Subspace and PRIMA algorithm to simplify the high-order RC network calculation, not only maintaining the no-source feature but also degrading the complexity of the calculation.
- Achieved the algorithm in Cpp together with a graduate student.

**A Facial Tracking Camera Pan for the Online Class during Pandemic Lock Down**
Projects in class MST210 in Sun Yat-sen University                                                            Autumn Term 2022
- Built the system with one Arduino Uno, two steering engines, one small camera, and external power for motors.
- Used the haar-cascade classifier in OpenCV to track faces. Attached the system to the PC serial port and USB port for controlling and data transporting. Co-working with a roommate.

**An Automation Computer Vision Measurement System for Industrial products Defects detection.**
Projects in 2021 Asia and Pacific Mathematical Contest in Modeling (Winning the Second Prize)      November 2021
- Proposed a CV measurement system to solve the problem of size examination and defect detection.
- Combined the Camera calibration methods with the Sub-pixel interpolation methods to increase the precision.
- Achieved high accuracy in products' contour segmentation and measurement, winning the 2nd Prize in the contest.

## PUBLICATIONS

1. **Yongjun He**, Gengzhen Qi, Pui-In Mak *A Blocker-Tolerant Mixer-First Receiver with Channel BW Extention Technique Achieving 22.2 dBm OOB-IIP3 and 23.3 MHz BW* (Nominated as the Best Student Paper & Winning the Best Presentation Award in the 7th International Conference on Integrated Circuits and Microsystems **ICICM** 2022)
2. Yi Mao, Yuyang Du, **Yongjun He**, Gengzhen Qi *A 0.5 to 2GHz Blocker-Tolerant Receiver Achieving 29dBm OOB-IIP3 and 3.2 to 6dB NF Using Bottom-Plate Switched-Capacitor Technique* (Paper accepted by the 18th Asia Pacific Conference on Circuits and Systems **APCCAS** 2022)

## COMPUTER AND LANGUAGE SKILLS

- Electric circuit simulation software(language): Virtuoso, Multisim, Vivado;
- Programming languages: Verilog, Python, MATLAB, C&Cpp, Assembly Language, LaTeX;
- Languages: Chinese (Native), Cantonese (Native), English-second language, Japanese-third language.

## LEADERSHIP AND EXTRACURRICULAR EXPERIENCES

- Volunteering in SYSU Admission Assistant Team in Zhaoqing, Guangdong.   (December 2021– February 2022)
- Working for the Student Council in my Department MST.                          (June 2021 – June 2022)
- Interest: Microelectronics and Chip Design, Biochemical, Personal Health and Treatment.