

# Zijian HE

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The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

## Education

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**The Hong Kong Polytechnic University** GPA: **3.58/4.0** Hong Kong  
Bachelor of Engineering in Electrical Engineering Aug 2016 – May 2020

**Awards & Honors:** Faculty of Engineering Dean's List (2017, 2018)

**Relevant Coursework:** Optical Fiber Systems, Linear Systems and Signal Processing, Analogue and Digital Circuits, Applied Electromagnetics, Power Systems, Computer System Principles, Computer Programming

**Cardiff University, Exchange** Cardiff, UK  
Sept 2018 – Jan 2019

**Relevant Coursework:** Power Electronics, Automatic Control, HF and RF Engineering

## Research Experience

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**Department of Electronic and Information Engineering**, The Hong Kong Polytechnic University, Research Assistant July 2020 – Current

- Compensate sidelobes of the Optical Coherence Tomography(OCT) signal by the Composite Complex Apodization Method (CCAM)

**Photonics Research Center**, The Hong Kong Polytechnic University, Research Assistant Mar 2019 – July 2019

- Constructed polymer Whispering-Gallery-Mode Resonators by 3D  $\mu$ -Printing technology.
- Optimized performance of the resonator by experiments and software simulation (MATLAB/COMSOL).
- Evaluated through multiple methods including coupling effects by Optical Spectrum Analyzer (OSA).
- Fabricated tapered fiber with desired characteristics by optimization.

**Polarization demultiplexing for optical communication systems**, Final Year Project Aug 2019 – June 2020

- Digital modulation of various signal formats for optical communication.
- Simulated attenuation and dispersion of encoded signal during transmission.
- Demodulation and compensation by dynamic-channel equalization method at receiving end.

**Fiber Bragg grating based sensors research project**, The Hong Kong Polytechnic University, Research Assistant

- Built the fiber-Bragg-grating-(FBG)-based temperature sensors for textiles. Oct 2019 – Dec 2019
- Experimental data processing and simulation with MATLAB/COMSOL.

**MATE International ROV competition**, Task 1, Team Member, **Team Ranking: 5/28** Jan 2018 – May 2018

- Designed mechanical structures of ROV parts including wireless charging port and air bag releasing system with CAD drawing.
- Designed control and data transmission methods of ROV with Wi-Fi and Bluetooth.

**Mathematical Contest in Modeling**, Task B, Team Leader Jan 2018 – Feb 2018

- Data collection with Python and mathematical model building.
- Optimized results by analytic hierarchy process and nonlinear programming with the aid of MATLAB.

## Internship

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**Ooredoo Oman**, Quality Assurance Team June 2018 – Aug 2018

- Controlled the quality of Base Transceiver Station (BTS) in terms of installation and configuration, including telecom and power equipment, by series inspections and testing process.
- Monitored working conditions of BTS with the SCADA system and communicated with the headquarter as well as data center.

## Publications

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1. Huang, D., Li, F., He, Z., Cheng, Z., Shang., & Wai, P.K.A. (2020). 400 MHz ultrafast optical coherence tomography. Submitted to *Optica*.

2. Ouyang, X., Liu, T., Zhang, Y., He, J., He, Z., Zhang, A. P., & Tam, H. Y. (2020). Ultrasensitive optofluidic enzyme-linked immunosorbent assay by on-chip integrated polymer whispering-gallery-mode microlaser sensors. *Lab on a Chip*.

3. Xiang, Z., Wan, L., Gong, Z., Zhou, Z., Ma, Z., OuYang, X., He, Z., & Chan, C. C. (2019). Multifunctional Textile Platform for Fiber Optic Wearable Temperature-Monitoring Application. *Micromachines*, 10(12), 866.

## Activities and Leadership

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Hong Kong String Orchestra, Mentorship Program, Hong Kong, Member Dec 2016 – Apr 2017

Voluntary Teaching for underprivileged children, Shanghai, Team Leader Feb 2017 – July 2017

## Skills

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Programming Languages: C++, C, MATLAB, Arduino, Python

Applications: COMSOL, ADS, AutoCAD, SolidWorks, Visual Studio, ANSYS Maxwell