

# Yuzhen Zhuo

## Senior (Embedded) Software Engineer, Expert in IoT and Home Automation

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I'm actively looking for new challenges, eager to learn and adopt new technologies in my next product.

## Skills

**Programming :** C/C++, Node JS, Python, Bash Script, VHDL/Verilog HDL, HTML/CSS/Javascript  
**Database :** MySQL, MongoDB, SQLite  
**Dev Tools :** Eclipse, Sublime Text, Visual Studio, Git, MantisBT, Trac, Github, BitBucket  
**OS Platform :** Windows, Linux(Debian/Ubuntu, RHEL, OpenWRT and so on), RTOS(Free RTOS, ThreadX)  
**Comm Protocols :** Bluetooth/BLE, Zigbee/RF4CE, WiFi, GPRS, UART, SPI, I2C, CAN, ModBus, PLC, 6LowPAN

## Professional Experience

RFCOM Technologies Pte. Ltd., Singapore

Senior Software Engineer

Jan 2016 - Present

Present Dec 2016	<b>HDB Smart Socket Solution</b> <div>3G-PLC6LowPANWiFiBLEµITRON RTOS</div> <ul style="list-style-type: none"><li>&gt; Project Coordination with two partner enterprise</li><li>&gt; API Definition and Documentation for internal use and for our partners</li><li>&gt; Develop a 3G-PLC 6LowPAN Coordinator and PLC-WiFi-BLE Gateway</li><li>&gt; Implement the power consumption measurement</li></ul>
Present Oct 2016	<b>BLE Mesh-WiFi Gateway</b> <div>BLE MeshWiFiOpenWRTMQTTNode JSTLS/SSL</div> <ul style="list-style-type: none"><li>&gt; UBoot Bootloader and OpenWRT feeds/packages customization</li><li>&gt; Mosquitto MQTT Broker for LAN access</li><li>&gt; MQTT Node JS Client connect to a Cloud Server</li><li>&gt; BLE Mesh UART Modem</li><li>&gt; HTTPS Web Server for Bootloader/Firmware Upgrade and WiFi Configuration</li></ul>
Dec 2016 Nov 2016	<b>RF4CE/IR Universal TV Remote Controller</b> <div>RF4CEIR</div> <ul style="list-style-type: none"><li>&gt; IR Learn</li><li>&gt; Standalone Setup</li><li>&gt; Philips On Screen Simple Setup</li></ul>
Oct 2016 Aug 2016	<b>BLE Module with Transparent Serial Port Profile for Australia and New Zealand Market</b> <div>Bluetooth Low Energy</div> <ul style="list-style-type: none"><li>&gt; Product Feature and Functionality Definition</li><li>&gt; Implement the features from scratch</li><li>&gt; Technical Trainings for disty and customers</li></ul>
Jul 2016 Mar 2016	<b>BLE Module Modem Firmware and cross-platform Host SDK</b> <div>Bluetooth Low Energy</div> <ul style="list-style-type: none"><li>&gt; BLE modem firmware based on Renesas BLE solution</li><li>&gt; Build up a cross-platform Host SDK for the easy integration</li><li>&gt; Create User Manual and Application Notes</li><li>&gt; Technical Training for disty and customers</li></ul>
Jun 2016 Feb 2016	<b>Renesas BLE stack on Synergy Platform(Verified Software Application)</b> <div>BLEBeaconRTOS(ThreadX)</div> <ul style="list-style-type: none"><li>&gt; Develop BLE host SDK on Synergy Platform</li><li>&gt; Implement BLE iBeacon/Eddystone Beacon/AltBeacon</li><li>&gt; Implement BLE Blood Pressure Base Station</li></ul>

Jun 2016	<b>BLE Mesh system solution for Home Automation</b>
Nov 2015	<div>BLE Mesh</div> <ul style="list-style-type: none"> <li>➤ Build up the BLE Mesh system framework and platform</li> <li>➤ Define BLE Mesh APIs and device classification and identification</li> <li>➤ Implement BLE Mesh enabled Smart LEDs with RGB, white and yellow. It supports scenes, timers, flash, breathe and dim mode.</li> <li>➤ Implement a BLE mesh module with UART interface to integrate into digital control systems for chained hotels</li> </ul>
Jan 2016	<b>On Screen Simple Setup</b>
Nov 2015	<div>RDK Linux</div> <div>HTML5/CSS</div> <div>RF4CE</div> <div>Linux USB driver</div> <p>Develop On Screen Simple Setup Application on Set-top Box platform. It could configure Philips Universal Remote Control Unit according to your TV brand and model.</p>

RFCOM Technologies Pte. Ltd., Singapore

**Embedded Software Engineer**

*Oct 2014 - Dec 2015*

Nov 2015	<b>GPRS Module for Smart Metering</b>
Jun 2015	<div>Abstract Operating System</div> <div>TCP/IP</div> <div>GPRS</div> <div>Quality Control</div> <ul style="list-style-type: none"> <li>➤ Design and implement an abstract OS layer which manages the power, timer, events, tasks, peripherals and other resources.</li> <li>➤ GPRS network management and TCP/IP connection maintenance</li> <li>➤ Design efficient quality control mechanism and software for mass production</li> </ul>
Aug 2015	<b>Meter Reading Collection System for legacy analogue meters</b>
May 2015	<div>Tesseract OCR</div> <div>Image Recognition</div> <div>Linux Debian</div> <div>OpenCV</div> <div>ModBus</div> <div>Django</div> <div>Nginx</div> <div>MySQL</div> <div>Digital Ocean</div> <ul style="list-style-type: none"> <li>➤ Design and implement an auto-collection solution for legacy analogue meters</li> <li>➤ Image pre-processing for meter reading capture</li> <li>➤ Train Tesseract OCR Engine for high accurate digit recognition</li> <li>➤ Supervise an Intern Student to setup a Demo Server at Digital Ocean</li> </ul>
Feb 2015	<b>Bluetooth Set-top Box Remote Control Unit</b>
Oct 2014	<div>Bluetooth 3.0 EDR</div> <div>Voice Control</div> <div>Accelerator/Gyro</div> <div>Air Mouse</div> <div>Touchpads</div> <ul style="list-style-type: none"> <li>➤ Gesture recognition using touchpad</li> <li>➤ Air Mouse based on the accelerometer and gyro</li> <li>➤ Design failure-safe Over-The-Air firmware update</li> <li>➤ Factory mass production testing software</li> </ul>

Maquet Critical Care AB, Getinge Group, Sweden

**Contract Software & FPGA Engineer**

*Jul 2013 - Feb 2014*

Feb 2014	<b>Patient Simulator on RealTime Linux</b>
Jul 2013	<div>Real Time Linux</div> <div>FPGA</div> <div>Mathematical Modelling</div> <div>Automatic System Testing</div> <div>Failure Injection</div> <div>Google Protocol Buffer</div> <ul style="list-style-type: none"> <li>➤ Build up a real-time Linux on Raspberry Pi</li> <li>➤ Simulation model for patient lung to interact with respiratory ventilator which is a safety critical model</li> <li>➤ Backdoor to simulate and inject Hardware fault/defect</li> <li>➤ Translate the test cases into automatic testing scripts</li> </ul>

## Training

Sep 2016	<b>RFCom BLE Module Technical Training, Sydney and Auckland</b> Main Trainer <div>BLE</div>
May 2016	<b>Renesas Synergy Platform Technical Training, Singapore</b> Assistant Trainer <div>Renesas Synergy</div> <div>ThreadX</div>

## Education

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Jun 2014	Uppsala University, <i>Uppsala, Sweden</i>
Aug 2012	M.Sc. in Embedded Systems
Jun 2012	Zhejiang University, <i>Hangzhou, China</i>
Aug 2008	B.Eng of Information and Communication Engineer

## Publication

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2014	Static Priority Schedulability Analysis of Graph-Based Real-Time Task Models with Resource Sharing
2014	Non-intrusive Patient Simulator for Medical Ventilator Software Verification

## Languages

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Madarin	● ● ● ● ●
English	● ● ● ● ○