



# Heong Chee Meng 向志明

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## MAJOR PROJECTS

**Q Sentral** — *Destination Control System for 28 Toshiba elevators for 4 tower blocks, including 24 LCD terminals*

**Klang Valley MRT 1 (SBK Line)** — *Remote Control (SCADA) System for 210 escalators over 24 stations. MRT2 (SSP Line) over 80 escalators and 10 elevators.*

## EXPERIENCE

2020 - PRESENT. Internet of Things, Google Home & Assistant (Actions on Google server), IoT Security, IoT & WiFi Security (WPA Enterprise and Management Frame Protection).

2013-2018 Modbus-based SCADA with HMI. Includes remote start/stop and fault monitoring. DevOps-style deployment without increasing R&D headcount. Project completed ahead of schedule- proven success (also secured forthcoming MRT2 SSP Line SCADA for above-ground stations escalators and elevators).

### **IoTux Sdn Bhd** — *Chief Technology Officer*

2019-Present

Google Home devices, Narrowband Internet of Things, IoT Security, Large-scale IoT Lift Monitoring System

### **MS Elevator Engineering, KL** — *Assistant General Manager*

2018-2017

Product R&D for Klang Valley MRT2 SCADA and Destination Control Systems

### **MS Elevator, Prai & KL** — *R&D Assistant General Manager*

Nov 2009 - 2017

In charge of Product R & D for elevator, escalator and related products for Toshiba CV300, MCB2060GW and MS68 product series. Manages several development & maintenance teams and reports directly to Group CEO. Direct (DevOps) support for Q Sentral, MRT1 & MRT2



捷运职员亲切的向乘客派发宣传单，欢迎他们首日免费使用捷运服务。（图：星洲日报）

## SKILLS

Low-cost rapid (on-time!) product development & deployment.

Training R&D teams, succession planning.

Rapid Prototyping, especially for **Internet of Things (IoT) for Industry**, e.g. ESP8266, IFTTT, MQTT, Google Assistant, WiFi mesh, Bluetooth, HTML5, Android Apps, LAMP Stack, microservices(docker), **Amazon AWS, Google Cloud**

**FPGA Design:** Intel Quartus, CPU bridges

VMEbus, DOS system upgrades & retrofits, semiconductor assembly equipment maintenance (esp old, unsupported systems).

Virtualization since 2007: native(KVM), full (Qemu),

## **MS Systems Software, Prai — R&D General Manager**

2012 - 2017

In charge of Product R & D. Products include controller software MCB2060GL series elevator, Destination Control System for Toshiba elevators, BACnet/Modbus Elevator/Escalator Remote Monitoring & Control System for MRT escalators. IoT products for Escalator & Elevator Remote Maintenance including Data Mining. Manages several development teams and reports directly to Group CEO. Architect and Lead Developer.

## **ON Semiconductor, Seremban — Senior Staff Engineer**

2000 - Oct 2009

Development of electronics & software for semiconductor assembly equipment, e.g., semiconductor parametric testers, wire-bonders, die-attach, etc

## **Motorola, Seremban — Senior Electronics Engineer**

1994 - 2000

Joint development(with Philips Semiconductor, Nijmegen) of electronics & software for automated factory (reel-to-reel) semiconductor assembly equipment, e.g., semiconductor parametric testers, wire-bonders, die-attach, etc

## **EDUCATION**

### **Universiti Malaya, Kuala Lumpur — B. Eng(Elect) Hons, 2nd Upper**

1981 - 1985

Electronics and control theory as electives, graduated with Honours, 'A' for thesis.

## **Projects**

lightweight(docker, 2016)

Embedded Linux development since 1995: kernel, and device drivers.

DevOps, especially in Product Deployment

Industrial/Commercial embedded controllers, firmware, Industrial long-distance (incl wireless) signalling: TCP/IP, UDP, Modbus, RS-485, RS-232C

## **IEEE Technical Papers**

**Sustainable Speedup of Semiconductor Manufacturing Legacy Linked Die-bond and Wire-bond Systems EMAPS 2009**

**Sustainable Speedup of a Legacy Semiconductor Manufacturing Parametric Test System EMAPS 2009**

**Enabling recipe automation for non SECS/GEM semiconductor assembly machines EMAPS 2007**

## **LANGUAGES**

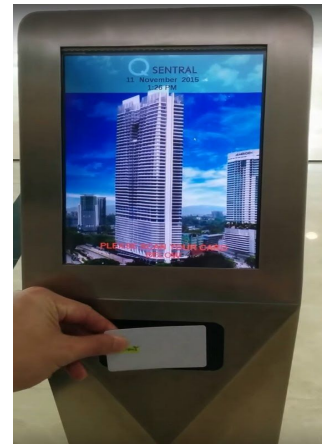
Written & Spoken: English, Bahasa Melayu. Spoken: Cantonese, Hokkien, Hakka, Dutch

## **Klang Valley MRT 1 (SBK Line) — Remote Control (SCADA) System for 210 escalators over 24 stations.**

2012-2017 Modbus-based Escalator Monitoring System interfacing to Building Management System allowing for remote operation, including executing automatic evacuation plans.

## **Quill Sentral — Destination Control System**

2012-2015 DCS for 28 Toshiba CV300 elevators. Improved performance 48% enabling customer to reduce total elevators from 32 to 28. Features MyKad-based passenger access control, touch-screen multimedia interface. Smartphone-compatible. Remotely-maintained IoT capability



## **MCB2060GL — Elevator Controller Software**

2012-2014 Asymmetric Multiprocessing C-language for the 32-bit NEC 70F3107. Inverter driven Servo PMSM Traction Machine, 4-Car Group, Battery-backed Automatic Rescue. Full regulatory compliance, backwards-compatible. 800 units produced, also exported to Myanmar, Indonesia, & Bangladesh, e.g., IOI Boulevard

## **FETTest 20% Speedup — FETTest Parametric Semiconductor Tester Sustained 20% Speedup**

2006-2009 Achieved using only software, and replacement of embedded PCs. Used novel methods like Virtual Machines to maintain compatibility. VMs are commonplace today, but not when used to drive high-speed IO. Run rate is in tens of millions a year.