LIN KUN-YING (林昆穎)

> E-Mail: sivn0105@gmail.com
> Phone: +886911772561

Work Profile

- ### Current Job

  [2015 early ~ Now]
  RD Principle Engineer of Delta Research Center(DRC) @ Delta Electronics,Inc.

  Job Responsibilities:

  i. Develop next generation IIoT Smart Gateway base on OPC Unified Architecture standard on embedded Linux system.
  ii. Research & develop heterogeneous signal based track and trace system for human or object target.

- ### Previous Work Experience

  [2012 late ~ 2015 early]
  Co-Founder, Algorithm Engineer, and Software Engineer @ SAILS Technology

  Job Responsibilities:

  i. Develop mobile phone indoor navigation software engine SDK on Android platform.
  ii. Develop mobile phone indoor positioning calibration and deployment tool.
  iii. Develop demo app on different kinds of indoor positioning environment.
  iv. Develop indoor map control engine (routing algorithm, finger gesture map control function).

[2009 late ~ 2012 late]
Senior RF Engineer of Mobile Communication Department @ Wistron NeWeb Corporation

Job Responsibilities:

i. Develop Lenovo **Lephone** (ODM project for Lenovo first 3G smartphone) (WCDMA & EVDO).
ii. RF front-end design and debugging base on **Qualcomm Snapdragon QSD8250 + RTR6285** platform.
iii. GNSS Front end circuit design and debugging.

Technical Skill & Develop Experience

- ### General Skill

i. Languaue: Java, C, Python
ii. Instrument: Oscilloscope, Spectrum Analyzer, Network Analyzer
iii. Tool: OrCAD capture, LabView, Matlab, Git

- ### Wi-Fi & Bluetooth Low Energy (BLE)

i. **Mobile**: Scanning advertising signal RSSI of surronding BLE beacons or Wi-Fi AP by using Android BLE/Wi-Fi API.
ii. **BLE protocal stack**: familiar with BLE4.0/4.1/4.2/ PHY and packet data format.
iii. **BLE application protocol stack**: **iBeacon** for real case use experience, **Eddystone** & **AltBeacon** had study experience.
iv. **Tool**: Experience with **SmartRF Packet Sniffer Tool** to verify BLE beacon packet data information on **TI CC2540 MCU**.

- ### Algorithms

i. Develop **DBSCAN** clustering for positioning location selection technique.
ii. Develop **FIR** and **IIR** signal processing for RSSI smoothing.
iii. Develop Positioning algorithm:

- Absoluted positioning algorithm:
  a. Proximity approach (Path-loss model approach).
  b. RSSI fingerprinting approach.
  c. Lateration approach: develop **Least-square** & **Newton-Rsphson** solver.
  d. **Angle of Arrive (AoA)** approach simulation analysis.
- Relative positioning algorithm:
  a. Attitude and heading reference system(**AHRS**) implementation by fusing accelerometer/gyroscope/magnetometer sensor
  b. Human step length predition algorithm.
  c. Implement **Dead-Reckoning** position estimating algorithm.
- Fusion positioning algorithm:
  a. Fusing both absoluted and relative positioning technique.
  b. Develop **Kalman Filter** & **Particle Filter** data fusion algorithm.

iv. Path routing algorithm: 3D **dijkstra** shortest path algorithm.

- ## Commnuication Interface

i. **I2C** & **SPI** sensor signal extration (experience with 10-DoF IMU sensor board **GY-87:MPU6050/HMC5883L/BMP180** on Raspberry Pi).
ii. USB-to-TTL (UART or RS232) for connecting PC Terminal.

- ## RF Technique Knowleage

i. Antenna element and array design.
ii. Experience for switch-beam beamforming (base on **Butler Marix** beamforming network) front-end system development.
iii. Mobile phone RF front-end circuit design and debugging.

- ## Linux Skills

i. GDB debugger.

ii. GNU Toolchain usage.
iii. Linux boot process knowleage.
iv. Valgrind Memory leak checker.
v. Basic Shell scripting.
vi. Basic CMake build project.

Honors-Awards

- Enterprise Award: 2013 Mobileheros, Smartphone app implementation group (2013 通訊大賽: 智慧終端實作組, 企業獎)

Publication

IEEE Conference Paper

- A Fast Clutter Cancellation Method in Quadrature Doppler Radar for Noncontact Vital Signal Detection

Thesis

- Design of Remote Wireless Vital Signal Detection System with Novel Static and Dynamic Clutter Cancellation Technique

Education

National Chung Cheng University, Taiwan
Master of Science (MS), Microwave Engineering. (2007 - 2009)

National Chung Cheng University, Taiwan
Bachelor of Science (BS), Communications Engineering. (2003 - 2007)