

# RYAN CHAN WEI ZHI

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## UCSI University

*BEng (Hons.) Electrical and Electronic Engineering*

**Kuala Lumpur**

*Graduation in August 2023*

- **CGPA:** 3.05/4.00 | Dean's List Awarded for the semester Jan – May 2020

## UCSI Muay Thai Club | Vice President

*September 2021 – February 2022*

- Coordinated bi-weekly training alongside the coach and President for a group of ~40 members; and organized briefing sessions on Clubs Open Day to introduce Muay Thai to aspirants - increased women membership by 25%

## UCSI Bursa Young Investor Club (BYIC) | Event Organizer

*May 2020 – December 2021*

- Organized a fundamental analysis seminar by personal finance duo MJ Gan, and John Huo

## Design Projects (Awarded Result: 4.0/4.0 GPA)

### Digital Multimeter operated from a Mobile App

Powered from a phone battery and capable of measuring Voltage, Current, Resistance, and Continuity; the device operates on Arduino software and is interfaced to a mobile app developed using Flutter to display measurement values.

### Grid-Connected DC/AC Inverter - Power and Control Circuit with Thermal Model

DC to AC Power Inverter with active current control using Park/Clarke transformations between the  $\alpha\beta 0$  and  $dq$  reference frames for grid synchronization using a PLL, and SPWM to operate below a total V & I harmonics threshold. Implemented a Python Script in Jupyter to simulate incremental component values and a DC Sweep in PLECS.

### Digital System of a Vending Machine using Verilog HDL

Mealy Finite State Machine implementation of a money and inventory tracking system using counters and timers.

### Smart CCTV for attendance capture via facial recognition with RT data-logging to Thingspeak

IoT project using OpenCV in Python built on a Raspberry Pi4 that I'm currently redoing on an Nvidia Jetson Nano.

## INTERNSHIP EXPERIENCE

### SkyeChip Sdn Bhd

*Physical Design Engineer*

**Bayan Lepas, Penang Island**

*September 2022 – December 2022*

- Worked on the implementation of HBM3 IP in TSMC's 7nm technology node, handling input collaterals such as lef, def, spef, apl, lib, timing, gsc formats, and crafting GSR files for electromigration simulations.
- Developed TCL procs to extract pin locations from a full chip .ndm, and wrote various scripts to pull information from timing reports and filter data for IR-drop violations using primarily RegEx in Perl.
- Wrote a literature review and summary on low-power design techniques related to reducing power consumption in HBM3 IP, including topics such as Dynamic Voltage and Frequency Scaling as well as Power and Clock Gating.

### KLK OLEO ~ a subsidiary of the public listed Kuala-Lumpur Kepong Berhad

*Electrical and Instrumentation Engineer*

**Mutiara Damansara, Kuala Lumpur**

*November 2021 – December 2021*

- Designed DCS functional block diagrams (FBD) related to motor protection and control, instrument performance and data presentation as requested from Process and Production; and created VB scripts for extracting DCS data from a historian into a Power BI dashboard for data presentation of process yield, raw materials consumption etc.
- Conducted a feasibility study on the implementation of Solar Energy harvesting as a potential cost-saving solution across KLK factories and offices; met industry professionals for advice and saved my supervisor 50+ hours.

### General System Engineering Sdn. Bhd.

*Service Engineer*

**Kota Kemuning, Shah Alam**

*September 2021 – November 2021*

- Led a team of 2 other interns in wiring and electrical assembly, as well as metal fabrication and machining; in one occasion completing a set of 2 LV cabinets measuring 5.5ft by 2ft in under 48 hours.

## SKILLS

- **Analog Design:** Cadence Virtuoso, Cadence OrCad, NI MultiSim, SIMetrix/Simplis, TI-TINA Designsoft
- **Digital Design:** Verilog & SystemVerilog on – Intel Quartus, Xilinx Vivado, Icarus Verilog, Lattice Diamond
- **Physical Design:** Synopsys ICC2, Design Compiler, Primetime, Ansys Totem, GSR file crafting for IREM
- **Scientific Computing:** MATLAB, Scilab and Xcos, GNU Octave, Python SciPy, PyPSA
- **Modelling:** Simulink (Simscape Electrical), PLECS, PSIM
- **DCS, PLC, & SCADA:** Honeywell Experion PKS C300, Omron CX-Programmer, SIEMENS SIMATIC
- **Programming, Scripting, & Tools:** C, C++, PIC Assembly, Julia, LaTeX, VB, TCL, Perl, Awk, Linux/Unix
- **Hardware Fabrication:** MIG, TIG, Arc-Welding, Soldering Iron, Hand-drill, Grinder, Oxy Cutter
- **Productivity and Insight:** MS Word, MS Excel, MS Power Automate, MS Power BI