Tao Yun Huang

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Customer Engineer · Field Service

EQUIPMENT MAINTENANCE · FAULT DIAGNOSIS · ON-SITE CUSTOMER SUPPORT

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PROFILE

Hardware engineer trained in electrical engineering, with two and a half years across two production studios delivering systems into the field — deadline-fixed public deployments for government agencies, a national museum, and major retail, where the equipment had to run on opening day with no second attempt. Owned installed systems end to end: mechanical and electrical installation, commissioning, scheduled preventive maintenance, on-site fault diagnosis and downtime recovery, remote monitoring, and direct accountability to the customer through handover and the warranty period. Strongest at the physical-signal layer — isolating noise, grounding, EMI, and bus or communication faults with instruments rather than by swapping parts. Available for shift work including nights, on-call rotation, cleanroom PPE, and travel including overseas assignment.

FIELD READINESS

- ✓ Shift work including night shift
- ✓ Cleanroom work — full PPE
- ✓ Extended standing, confined-space and at-height work, lifting to 16 kg
- ✓ 24/7 on-call rotation
- ✓ Travel 25%+, including overseas
- ✓ Immediate start · relocation anywhere in Taiwan or abroad

HARDWARE ENGINEER · IF PLUS ART 當若科技藝術 · DEC 2024 – APR 2026

— **Preventive & corrective maintenance.** Owned permanently installed electromechanical systems after handover — scheduled PM cycles, on-site fault diagnosis, downtime recovery, and remote monitoring and diagnostics over the network. Sole engineer accountable through the warranty period.

— **Fault isolation at the physical layer.** Diagnosed noise coupling, grounding problems, EMI, and bus / communication conflicts using oscilloscope, multimeter, and logic analysis — separating mechanical, electrical, and firmware root causes instead of swapping parts. Ran electromagnetic-compatibility (EMC) testing on custom hardware and closed out the interference paths it exposed.

— **Production support & quality.** Resolved technical issues arising in production, ran product verification with the manufacturing team, and took part in quality control.

— **Documentation & specifications.** Wrote technical documentation and design specifications, compiled test reports, and maintained schematics and design drawings as the controlled reference for build and service.

— **Installation & commissioning.** Installed and commissioned systems on customer sites against fixed opening dates: mechanical assembly and alignment, wiring, sensor mounting and calibration, and acceptance testing with the customer present.

— **Motion control & tuning.** Designed and tuned closed-loop PID position and velocity control with encoder feedback for a 60 kg armature on an overhead-crane axis, over an inner torque / speed loop tuned against varying inertia — eliminating overshoot, oscillation, and settling error at end positions.

— **Actuation & timing.** Integrated solenoid valves and pneumatic actuators with embedded control, and synchronized mechanical motion with display and audio subsystems on a shared timing reference through continuous daily operation.

— **Customer interface.** Direct point of contact for government agencies, a national museum, and retail clients — scheduling site access, reporting equipment status, and coordinating fixes while the venue stayed open to the public.

— **Electronics build & rework.** Custom PCB schematic and layout, circuit simulation and analysis, component selection and BOM management, hand-etched boards, analog assembly, soldering and rework, wiring and power distribution, sensor-to-controller signal conditioning. Design iterations targeted lower cost and power draw and higher reliability.

Diesel-Electric Workshop

PERMANENT INSTALL · UNDER MAINTENANCE

National Railway Museum, Taipei · 2025

60 kg locomotive armature on an overhead-crane axis under closed-loop PID control, synchronized to a transparent-display overlay. Maintained on a scheduled PM cycle since handover, with on-site diagnosis and remote monitoring.

PID motion control · multi-axis synchronization · preventive maintenance & troubleshooting

AI Living Lab

SENSOR HARDWARE · CONTINUOUS DUTY

MODA · Taipei Computer Festival 2025

1,000+ users · 4 days

Custom instrumented-bicycle hardware: sensor acquisition, signal conditioning, and data normalization into a real-time processing chain. Ran continuous public duty for four days across 1,000+ users without intervention.

Sensor hardware · signal conditioning · continuous-duty reliability

Culture-Tech Exchange

NETWORKED SYSTEM · ON-SITE OPERATION

TAICCA · Pier-2, Kaohsiung · 4 days

Real-time networked system synchronizing mobile inputs to a venue display on a fixed 3-minute cycle; deployed, operated, and supported on site across the full run.

Cross-platform data sync · on-site deployment & live support

Moss Floating Layer

MULTICHANNEL AV · PERMANENT INSTALL

SCOPE TECH · Shin Kong Mitsukoshi A9 · 2025

Multichannel audio system specified, installed, and commissioned into a permanent retail environment in Taipei's busiest commercial district.

System design · installation & commissioning

TECHNICAL PROJECT MANAGER · KING ONE INTERACTIVE 王一互動科技 · JAN – DEC 2024

— **End-to-end technical delivery.** Led technical delivery of experiential technology projects across exhibitions, corporate showrooms, and trade shows — scope definition, schedule, on-site installation, and client acceptance.

— **Cross-functional coordination.** Coordinated mechanical, electrical, AV, and software scopes with internal teams and outside contractors against fixed, non-movable show-open dates.

— **Technical risk ownership.** Assessed technical risk during build and resolved integration and equipment failures on site while the show was running.

— **Delivery process.** Short iterative cycles on a Scrum-style backlog with task and issue tracking in Odoo.

EARLIER

Lecturer — Electronic Programming
PART-TIME · TEACHING
National Hsinchu Senior High School
Jul 2023 – Jun 2024

Designed and delivered an electronic-programming curriculum to a class of 13+ students — breaking technical material down for an audience with no prior background.
Technical instruction · curriculum design

Research Assistant
CONTRACT · NSTC-FUNDED PROJECT
Institute of Music, NYCU
Apr 2022 – Jan 2023

Technical support on a government-funded research project: proposal drafting and laboratory build-out, within an international collaboration with Kunsthochschule für Medien Köln (KHM). NT$500,000–800,000 per phase.
Laboratory build-out · research support · international coordination

HANDS-ON SYSTEMS EXPERIENCE

ELECTRICAL	PCB schematic & layout · hand etching · analog circuit design · soldering & rework · wiring and harnessing · power distribution · sensor signal conditioning
MECHANICAL	Assembly and alignment · overhead-crane axis · load handling to 60 kg · 3D-printed mechanism design · bench fabrication
MOTION & CONTROL	PID tuning · closed-loop position / velocity / torque · stepper & servo · encoder feedback · multi-axis synchronization
PNEUMATIC & GAS	Solenoid valves · pneumatic actuators · CO_2 / O_2 delivery with controlled flow and valve control
INSTRUMENTATION	Oscilloscope · multimeter · logic analysis · EMI and noise isolation · grounding · root-cause analysis
CONTROLS & NETWORK	Embedded systems · C++ · Python · UDP / OSC · network protocols · remote monitoring · Ubiquiti UniFi

SELECTED HARDWARE PROJECTS

Threshold · 閾
ELECTROMECHANICAL APPARATUS · 3 VERSIONS
Taichung 2022 · C-LAB 2023 · NYCU 2024

Closed-loop apparatus driving a brass plate with coordinated stepper motors, solenoid valves, and pneumatic actuators. Built and rebuilt across three deployments — actuator sequencing, mechanical settling time, and the latency budget between sensing and actuation.
Solo — actuator control · pneumatic integration · closed-loop stability

13-Voice CV Synthesizer
ANALOG DESIGN · PCB FABRICATION
1 master · 12 sub-boards · 2023

Thirteen self-designed, hand-etched boards sharing a common control-voltage bus and power distribution. The engineering problem was holding voltages accurate across all boards — bus loading, crosstalk between adjacent channels, supply decoupling — diagnosed board by board on the bench.
Solo — circuit design · PCB layout & etching · signal-integrity debugging

Circle of Confusion
GAS DELIVERY · MECHANICAL DESIGN
Digital Art Center, Taipei · 2024

CO_2 / O_2 delivery system running a controlled cyclic flow, plus a 3D-printed mechanism designed to mount on a head-worn assembly within its weight and balance limits.
Solo — gas delivery & valve control · mechanical design for additive manufacturing

EDUCATION

M.F.A. — Institute of Music, NYCU

2020 — 2024

國立陽明交通大學 — Research-methodology training: applying scientific method to human–machine collaboration. Thesis centered on machine-learning system design and implementation.

Electrical Engineering

2012 — 2015

Feng Chia University · 逢甲大學 — Control theory, circuit design, signal processing, embedded systems

CERTIFICATIONS

UniFi Full Stack Professional (UFSP)

2025

Ubiquiti · enterprise network design, routing & switching

UniFi Wireless Admin (UWA)

2025

Ubiquiti · wireless deployment & administration

AVAILABILITY

Immediate start · full-time · shift and on-call rotation accepted

Open to relocation — Hsinchu · Taichung · Tainan · Taipei · overseas

Mandarin Chinese (native) · English (professional) · Japanese (basic)