GARRY YUAN

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PROFILE

Electrical Engineering (Honours) / Computer Science graduate (UNSW) with broad technical expertise spanning analog and digital electronics, signal processing, embedded systems, power electronics, and RF engineering. Proven ability to design, simulate, and validate complex systems from concept to prototype. Experienced in MATLAB, Python, C, ADS, KiCAD, and hardware bench tools. Strong communicator with a record of delivering technical projects independently and within multidisciplinary teams.

EDUCATION

Bachelor of Engineering (Honours) – Electrical Engineering / Computer Science | UNSW Sydney

Relevant coursework: Digital Signal Processing, Power Electronics, Control Systems, Analogue Electronics, RF Circuit Design, Solid State Electronics, Analogue & Digital Communications, Electromagnetic Engineering

Research Thesis (ELEC4951/2/3): Adaptive noise cancellation, LMS algorithms, FIR/IIR filtering, MATLAB, FPGA architecture analysis | Industrial Training (ENGG4999): 60 days

EXPERIENCE

Electrical Test & Tag Technician | Go Test and Tag ***Feb 2026 – Present***

- Performed PAT testing (earth bond RPE, insulation resistance RISO, leakage current ILEAK) to AS/NZS 3760:2022 using Seaward PAC3760 DL across residential and commercial sites
- Maintained detailed test registers and compliance documentation; assessed and classified appliance risk across diverse workplace environments

Technical Support Engineer | Able Solar ***Dec 2025 – Present***

- Diagnosed faults in distributed solar inverter and BMS systems by interpreting hardware telemetry and system logs — data-driven root cause analysis; communicated findings and corrective actions to technical and non-technical stakeholders
- Maintained working knowledge across multiple product platforms and firmware versions

FPGA Design Engineer (Contract) | Avnet ***Apr 2026 – Present***

- Developed reference design on AMD Kria K26 (Zynq UltraScale+ MPSoC): 4× MIPI CSI-2 inputs → YUV422→RGB PL conversion → AXI-Stream → VDMA → PS DDR → PCIe XDMA Gen3 ×4 (C2H) to host at ~3.2 GB/s
- Justified PL-first raw data path over ARM A53 involvement to avoid CPU bottlenecks and preserve host-side AI/ML inference budget; evaluated PS vs PL Ethernet for LiDAR integration (~100 Mbps), recommending PL Ethernet for deterministic latency
- Delivered architecture block diagrams, Vivado/Vitis project, and documentation within 2-week client milestone

Research Contributor – Space Power Systems | UNSW – Vertically Integrated Projects ***Feb 2026 – Present***

- Contributing to a multidisciplinary team developing space-based wireless power transmission systems under UNSW's VIP program — system-level analysis, iterative design reviews, technical documentation across electronics, software, and mechanical engineering

Tutoring Assistant | Open-Wisdom ***Sep 2022 – Sep 2023***

- Developed structured problem-solving frameworks for 15+ students in mathematics and physics — improving outcomes by ~20–30%; strong ability to explain complex technical concepts clearly to varied audiences

PROJECTS

Research Thesis – Adaptive Noise Cancellation for Neural Interfaces | UNSW ***Feb 2025 – Dec 2025***

- Implemented LMS adaptive filtering in MATLAB and evaluated FPGA-based implementation pathways, improving SNR by 35 dB in multi-array optrode recordings
- Implemented FIR/IIR digital filtering pipelines enabling near real-time signal processing; simulated optical neural signal acquisition and optimised performance iteratively

Touchless Light Switch – Embedded Systems Design ***Jul 2025 – Sep 2025***

- Engineered ATmega328P C++ firmware managing dual-sensor inputs (IR + acoustic), debounce logic, relay control, and real-time timing constraints — reduced false trigger rate by 60% through layered hardware RC filter + software debounce + lockout timer fix
- Designed and simulated custom buck converter PCB in LTSpice; first build met specification without rework

Negative Power Supply Design for LM741 Op-Amp | ELEC3106 ***Feb 2025 – May 2025***

- Designed and built inverting buck-boost converter generating –5 V from +5 V using discrete components (N-MOSFET, 1 mH inductor, 1N4148 diode, 2200 µF capacitor)
- Integrated 555 timer IC for self-contained ~25 kHz PWM; achieved stable –5.0 V output with <320 mV ripple under 50 mA load — first build met specification

TECHNICAL SKILLS

Programming: C, Python, MATLAB, MIPS Assembly

Embedded & Hardware: Arduino, microcontrollers, ADC, PWM, IR sensing, oscilloscopes, function generators

Simulation & Design: MATLAB, Simulink, LTspice, LabVIEW, ADS (Advanced Design System), KiCAD

Electronics: Analog & digital circuit design, op-amps, active filters, power supplies, small-signal modelling

Signal Processing: FIR/IIR filters, Z-transform, FFT, LMS adaptive algorithms, noise cancellation

Communications & RF: AM/FM/digital modulation, SNR/BER analysis, transmission lines, impedance matching, S-parameters, Smith charts, ADS

Electrical Safety: PAT testing (AS/NZS 3760:2022), earth bond, insulation resistance, leakage current, Seaward PAC3760 DL

LEADERSHIP & EXTRACURRICULAR

Executive Member | UNSW Table Tennis Society ***2022 – Present***

- Organised competitions and events for 100+ members — initiative, cross-team coordination, and sustained community engagement across four years