CV 2: JAMES CHEN

Electronics Engineer - RF/Wireless & Digital Signal Processing

Contact Information

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PROFESSIONAL SUMMARY

Experienced Electronics Engineer with 8 years of expertise in RF/wireless systems, digital signal processing, and telecommunications equipment design. Specialized in high-frequency circuit design, antenna systems, and 5G/WiFi communication technologies with extensive experience in both hardware development and system integration. Proven track record of delivering complex RF solutions for telecommunications infrastructure and consumer wireless devices within Australia's competitive technology market.

CORE TECHNICAL SKILLS

RF & Microwave Design

- RF circuit design and impedance matching (DC-6 GHz)
- Antenna design and optimization (patch, dipole, array)
- Power amplifier and low-noise amplifier design
- Filter design (bandpass, lowpass, highpass)
- Smith chart analysis and transmission line theory

Circuit Design & Simulation

- Analog and mixed-signal circuit development
- High-speed digital circuit design and layout
- Power management and DC-DC converter design
- EMC/EMI analysis and mitigation techniques
- Thermal analysis and management

Design Software & Tools

- Advanced Design System (ADS) - 6 years
- CST Microwave Studio - 5 years
- Altium Designer (Expert Level) - 7 years
- HFSS electromagnetic simulation - 4 years
- Keysight SystemVue - 3 years
- MATLAB/Simulink - 8 years

Programming & Signal Processing

- C/C++ for embedded and DSP applications - 7 years
- Python for RF automation and measurement - 6 years
- VHDL/Verilog for FPGA implementation - 5 years
- DSP algorithm development and optimization - 6 years
- GNU Radio for software-defined radio - 4 years

Wireless Technologies & Protocols

- 5G NR and LTE physical layer design
- WiFi 6/6E (802.11ax) and previous standards
- Bluetooth and Bluetooth Low Energy
- Zigbee and Thread for IoT applications
- RFID and NFC system design

Test Equipment & Measurements

- Vector network analyzers (Keysight, Rohde & Schwarz)
- Spectrum analyzers and signal generators
- Real-time oscilloscopes and logic analyzers
- Anechoic chamber measurements
- EMC test equipment and procedures

PROFESSIONAL EXPERIENCE

RF SYSTEMS ENGINEER | Telstra Technologies, Sydney

June 2020 - Present (4+ years)

Senior RF engineer responsible for 5G infrastructure development and wireless system optimization for Australia's largest telecommunications provider.

Key Achievements:

- Led RF design team for 5G base station development covering 3.5 GHz and mmWave bands
- Designed antenna array systems achieving 25% improvement in coverage efficiency
- Reduced power consumption of RF front-end modules by 30% through innovative design
- Successfully deployed solutions across 150+ base stations in Sydney metropolitan area
- Mentored team of 5 junior RF engineers and coordinated with international R&D teams

Technical Responsibilities:

- Design and optimize RF power amplifiers for 5G base stations
- Develop antenna systems and beamforming algorithms
- Conduct electromagnetic compatibility testing and certification
- Perform over-the-air testing and network optimization
- Collaborate with software teams on digital pre-distortion algorithms
- Prepare technical specifications and design documentation

WIRELESS DESIGN ENGINEER | NextWave Communications, Sydney

August 2018 - May 2020 (1 year 10 months)

Specialized in consumer wireless device development with focus on WiFi and Bluetooth applications.

Key Achievements:

- Designed WiFi 6 radio modules for premium consumer routers and mesh systems
- Achieved industry-leading range performance through innovative antenna design
- Reduced BOM costs by 20% while maintaining RF performance specifications
- Led successful certification campaigns (ACMA, FCC, IC, CE) for 8 product variants
- Received "Innovation Award" for breakthrough antenna miniaturization techniques

Technical Responsibilities:

- Design RF front-end circuits for WiFi 6 and Bluetooth applications
- Develop PCB layouts for high-frequency mixed-signal boards
- Optimize antenna placement and matching networks
- Conduct RF performance testing and validation
- Support manufacturing with test procedure development
- Troubleshoot production issues and implement design improvements

ELECTRONICS ENGINEER | RF Solutions Australia, Sydney

February 2017 - July 2018 (1 year 6 months)

Entry-level position focusing on RF measurement systems and test equipment development.

Key Achievements:

- Developed automated RF test systems reducing measurement time by 60%
- Created calibration procedures for precision RF measurement equipment
- Contributed to 2 successful customer projects worth $500K combined value
- Implemented Python-based measurement automation saving 15 hours/week

Technical Responsibilities:

- Design RF test fixtures and measurement setups
- Develop automated measurement scripts using Python and LabVIEW
- Perform network analyzer calibrations and uncertainty analysis
- Support customer projects with custom RF measurement solutions
- Maintain and upgrade laboratory RF test equipment
- Document test procedures and measurement methodologies

EDUCATION & CERTIFICATIONS

Master of Electronics Engineering (RF/Microwave) | University of New South Wales *2015-2016 - Graduated with High Distinction*

- Thesis: "Millimeter-Wave Antenna Arrays for 5G Communications"
- Specialized coursework: RF Circuit Design, Antenna Theory, Electromagnetic Fields

- Research Assistant: Antenna Design Laboratory

Bachelor of Electrical Engineering | Macquarie University Sydney *2011-2014 - First Class Honours*

- Major: Communications and Signal Processing
- Honours Project: "Software Defined Radio Implementation of WiFi PHY"
- Academic Excellence Award: 2013, 2014

Professional Certifications:

- Certified EMC Engineer (iNARTE) - 2021
- Advanced Design System (ADS) Expert Certification - Keysight (2022)
- RF/Microwave Measurement Certification - Rohde & Schwarz (2020)
- IPC-2221 PCB Design Standards - 2019

Specialized Training:

- mmWave Design Workshop - IEEE MTT-S (2023)
- 5G RF Implementation Course - Ericsson Academy (2022)
- Advanced Antenna Design - CSIRO (2021)

PROFESSIONAL DEVELOPMENT

Continuous Learning (2020-2024):

- AI/ML for RF Applications - MIT Professional Education (2024)
- Advanced 5G Network Optimization - Nokia Bell Labs (2023)
- Sustainable RF Design Practices - Engineers Australia (2023)
- Technical Leadership Development - Telstra Leadership Program (2022)
- Massive MIMO Systems Design - KTH Royal Institute (2021)

Industry Engagement:

- IEEE Senior Member - Microwave Theory and Techniques Society
- Engineers Australia Member - RF/Microwave Technical Group
- Australian Communications and Media Authority (ACMA) Technical Advisor
- Guest lecturer at University of Technology Sydney - RF Design Course

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NOTABLE PROJECTS & ACHIEVEMENTS

5G mmWave Base Station Development (2022-2024)

- Led complete RF front-end design for 28 GHz 5G base stations
- Implemented advanced beamforming with 64-element antenna arrays
- Achieved 40% efficiency improvement in power amplifier design
- Successfully deployed in Sydney Olympic Park 5G trial network

WiFi 6E Mesh Router Development (2019-2020)

- Designed tri-band RF architecture supporting 6 GHz operation
- Developed innovative antenna system achieving 30% coverage improvement
- Implemented advanced interference mitigation techniques
- Product achieved #1 ranking in Australian consumer reviews

Precision RF Measurement System (2017-2018)

- Created automated vector network analyzer calibration system
- Achieved measurement uncertainty <0.1 dB up to 6 GHz
- Developed temperature compensation algorithms improving stability
- System adopted by 3 major Australian telecommunications companies

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TECHNICAL PUBLICATIONS & PATENTS

Publications:

- "Efficient Power Amplifier Design for 5G mmWave Applications" - IEEE Microwave Magazine (2024)
- "Antenna Array Optimization for Urban 5G Deployments" - IEEE Trans. Antennas & Propagation (2023)
- "WiFi 6E Coexistence in 6 GHz Band" - Australian Journal of Telecommunications (2022)

Patents:

- "Multi-Band Antenna System with Integrated Filtering" - AU Patent 2023456789 (2024)

- "Adaptive Power Control for 5G Base Stations" - Patent Pending (2023)

LANGUAGES & ADDITIONAL SKILLS

Languages:

- English (Native)
- Mandarin (Fluent)
- Cantonese (Conversational)

Additional Skills:

- Advanced project management and team leadership
- Technical presentation to executive and customer audiences
- International collaboration and cross-cultural communication
- Regulatory compliance and certification management
- Cost optimization and vendor negotiation
- Mentoring and technical training

Professional Memberships:

- IEEE Senior Member (#98765432)
- Engineers Australia (Member #2345678)
- Australian Communications and Media Authority Technical Panel