Jaric Thorning

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Education

University of Queensland — Brisbane, Australia

Bachelor of Electrical and Computer Engineering (Honours) (Dual Major) — *Feb 2014 - Jun 2020*

Bachelor of Computer Science — *Feb 2014 - Jun 2020*

Experience

Morse Micro — Sydney, Australia

Team Lead, System Integration Testing — *Jan 2023 - Present*

- Managing a cross-functional team of engineers, with varying seniority and experience. Overseeing the development of automated real-world test infrastructure. Responsible for sprints, team meetings, 1:1s, performance reviews, OKR definition, cross-team collaboration, and reporting to senior leadership.
- Led international Wi-Fi HaLow interoperability and coexistence test events for the Wireless Broadband Alliance. Developed a series of stand alone test applications, including a 2D throughput survey, a GPS based signal strength monitor and an ESP-32 based HaLow weather station.
- Built an on-device Flask based data capture tool to help run HaLow/ Z-Wave coexistence testing. Resulting in a smooth key customer demo, with live data capture updates.
- Designed, built and tested Variable Attenuator, Channel Emulator and RF Multiplexed chambered test setups. Also built custom 2000 unit test rig using aluminum profiles and 3D printed PETG components.
- Working with the core engineering team to feedback and report underlying RF issues, the applications team to sign-off on customer releases, and the marketing team to produce marking collateral and aid in sales.

Applications Engineer — *Jan 2022 - Jan 2023*

- Sole developer of comprehensive Python-based automation suite, used for both lab and real-world field testing. The suite automates the running of tests, visualisation of data, and final report generation. It uses a combination of asyncio, asyncSSH, fastAPI, SQLAlchemy, PostgreSQL, pandas, matplotlib, plotly/dash and fpdf. Jenkins is used for remote server test runs and Bitbucket Pipelines/ PyTest is used for CICD.
- Designed an AWS OpenVPN data back-haul solution for remote in-field testing and created a Python CLI for user/certificate management.
- Performed site surveys, including collecting overhead drone shots, floor plans, spectrum analysis captures and in-band noise measurements.
- Led several graduate programs, developing rotation program, presenting and generally up-skilling recently hired graduates.

Graduate Engineer (Software) — *Jan 2021 - Jan 2022*

- Gathered user requirements and wrote a TLV based UART communication protocol in C, enabling removal of the standard printf library and resulting in 20% lower overall memory usage.
- Debugged chip firmware issues, including interrupt handler exceptions and compiler optimisation issues.
- Used git/ bitbucket for version control and team collaboration, Jira for task allocation and Confluence for feature documentation.
- Built and brought up evaluation kits for cross-team usage.

Arup — Brisbane, Australia

Undergraduate Engineer — *Nov 2018 - Feb 2019*

- Designed and verified standards based road lighting using simulation models.

Anglo American — Middlemount, Australia

Undergraduate Engineer — *Nov 2016 - Feb 2017*

- Created and validated entire mine site High Voltage plans, in time for annual regulatory testing.

Technical Capabilities

Languages: Python, C/C++, Java, PostgreSQL, JavaScript, HTML/CSS, Swift
Frameworks: Django, Flask, FastAPI, React, Next.js, PyQT, PyTest
Development Tools: Git, Jenkins, Atlassian Suite, Linux
Libraries: Asyncio, Pandas, Matplotlib, Numpy, Pip, Poetry, PyEnv
Analysis Tools: Wireshark, Logic, Pandas, Matplotlib, Numpy, Gdb/Valgrind
Software: Datagrip, Visual Studio, QT Designer, BambuStudio/Fusion360, Slack, Microsoft Suite, Google Suite
Linux Tools: ssh/telnet, scp/rsync, iperf3/iperf2, ip/ifconfig, route, iw, wavemon, tcpdump, grep/awk/sed, vi/vim, make, gcc, nmap, arp/arp-scan
Equipment: Spectrum Analyser, Variable Attenuator, Channel Emulator, Signal Generator/ Oscilloscope, Power Supply, Logic Analyser, Pluto SDR, LitePoint

Projects

LoRaWAN WSN | *Python, Django, C, MQTT* *Jun 2017 - Jan 2020*

- Implemented a Wireless Sensor Network (WSN) to monitor environmental conditions around the University of Queensland Lakes.
- Wrote C firmware to capture data and send over LoRaWAN network using MQTT.
- Designed a full stack web application using Django. Backend set up to receive incoming data from MQTT server and serve data to frontend. Frontend designed to provide real-time sensor updates and data visualisations.

divvy | *Python, React, Django, Swift* *Jan 2024 - Present*

- Currently developing an open-sourced expense sharing platform, using a react frontend, django backend and swift iOS standalone application.