Xi Zhang

Founder & AI Engineer – AI-Native Business Automation for Australian Enterprises

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Melbourne, Australia | Australian permanent rights to work

Summary

AI engineer and aspiring founder building **agent-based business automation for Australian enterprises**. The thesis is straightforward: Australian Small and Medium Enterprises (SMEs) are squeezed between rising labour costs and stagnant process efficiency, and AI agents now have the capability to automate the manual workflows that previously required full-time staff. My focus is turning that capability into shipped product. The combination I bring is rare: **PhD-grade research depth** (9 publications in CORE A* venues including MobiCom, SenSys, INFOCOM, IEEE TMC, IEEE/ACM ToN) and **end-to-end production delivery** for Fortune 500 clients — not research demos, but AI-based applications that customers paid for and integrated into their operations. I have already taken AI systems from ambiguous requirements through architecture, training, optimisation, and production hand-off twice over. I am actively building **my own agent orchestration stack** on top of OpenClaw, MCP (Model Context Protocol), and adjacent frameworks — the technical backbone for AI-augmented business workflows that compress headcount cost without sacrificing quality. The goal is a productisable platform where any Australian SME can replace a manual back-office function with an autonomous AI workflow in days, not quarters.

Experiences & Projects

- **Founder & AI Engineer – AI Business Automation Practice** *Oct 2025 – Present*
  - Building an autonomous agent orchestration stack on top of OpenClaw, Hermes, OpenGOAL, and MCP (Model Context Protocol) — the technical foundation for AI-augmented business workflows.
  - Developing reusable patterns for multi-agent coordination, tool use, and DAG-style workflow execution, productised for enterprise customers.
  - Engaged with Australian SME clients to design and deploy AI-driven workflow automation, replacing labour-intensive back-office processes with autonomous agents.
- **AI Engineer – Deego Technology Pty Ltd, Melbourne** *Apr 2023 – Jul 2025*
  - Designed and built a full AI platform for a Fortune 500 retail client: phone-sensor-only indoor positioning across >10,000 m^2 stores, fully automated end-to-end with no cameras and no human-in-the-loop required.
  - Built autonomous AI agents for each pipeline stage (sensor fusion, posture classification, trajectory prediction), composed into an end-to-end autonomous workflow rather than a monolithic model.
  - Owned the full ML lifecycle: architecture, training, validation against drift targets (<3 m over 20 min), and on-device optimisation (quantisation, pruning) for direct inference cost savings.
  - Delivered a production AI-based application with Docker + CI/CD that the client's engineering team integrated directly. Set technical direction as tech lead.
- **AI Engineer (Research & Design) – RMIT University, Melbourne** *Feb 2019 – May 2020*
  - Led greenfield AI development for a Fortune 500 client's smartwatch gesture recognition system: replaced a failing classical pipeline with deep learning, lifting accuracy from unreliable to **95%+** across 8 gesture classes, 6 scenarios, 20 participants.
  - Reduced inference latency by **50%+** through model compression and system profiling, enabling real-time deployment on resource-constrained hardware.
  - Built a fully reproducible end-to-end workflow (data collection, preprocessing, training, hyperparameter tuning, validation) ready for handoff.
- **Postdoctoral Research Fellow – Macquarie University, Sydney** *Dec 2024 – Present*
  - Conducting research on multimodal AI and on-device inference for real-world interactive systems; building low-latency sensing and inference pipelines under practical deployment constraints.
  - First-author of **LargeCall** (IEEE INFOCOM 2026, CORE A*) integrating large language models with smartphone sensor data for real-time speech enhancement.
  - Guest lecturer for COMP8230 (Mining Unstructured Data), COMP8296 (AI/ML in IoT), COMP3210/6210 (Big Data); supporting HDR student supervision in Data Science and AI.
- **Database Developer – DJZH.org, Beijing** *Mar 2014 – May 2015*
  - Designed relational database systems, managed migrations and backup/recovery, and optimised SQL queries and indexing for application performance.

Education

- **PhD in Computer Science – RMIT University, Melbourne** *May 2020 – May 2024*
  - Thesis: *Enabling Advanced Human Sensing through Millimetre-wave Radar with Deep Learning*.
  - Published in top-tier venues including ACM MobiCom, ACM SenSys, IEEE/ACM Transactions.
- **Master of Information Technology – Monash University, Melbourne** *Feb 2017 – Dec 2018*
  - Thesis: *Anomaly Detection in Spark-Scala for Big Data*; Information Technology International Merit Scholarship.
- **Bachelor of Computer Science – Beijing Jiaotong University Haibin College, China** *Sep 2010 – Jun 2014*

Patents and Publications

C=Conference, J=Journal, P=Patent, S=In Submission, T=Thesis

[C.1] **Xi Zhang**, Xingwei Wang, Lei Wang, Jia Liu, Chenren Xu. (2026). **LargeCall: Large-Model-Assisted Phone Call Enhancement Using Smartphone's Built-in Accelerometer**. Accepted in *IEEE INFOCOM 2026, Core Rank A**.

[C.2] Yu Zhang, **Xi Zhang**, Hualin Zhou, Xinyuan Chen, Shang Gao, Hong Jia, Jianfei Yang, Yuankai Qi, Tao Gu. (2025). **XTransfer: Cross-Modality Model Transfer for Human Sensing with Few Data at the Edge**.

[J.1] Lei Wang, Xingwei Wang, and **Xi Zhang**, Xiaolei Ma, Yu Zhang, Fusang Zhang and Tao Gu and Haipeng Dai. (2025). **AccCall: Enhancing Real-time Phone Call Quality with Smartphone's Built-in Accelerometer**. In *UbiComp 2025, Core Rank A**.

[C.3] **Xi Zhang**, Yu Zhang, Zhenguo Shi, Tao Gu. (2023). **mmFER: Millimetre-wave Radar based Facial Expression Recognition for Multimedia IoT Applications**. In *MobiCom 2023, Core Rank A**.

[P.1] Tao Gu, Yu Zhang, **Xi Zhang**. (2023). **Facial Expression Sensing**. Patent No. 2023902311. Registration Date: 20-July-2023, Publication Date: 03-Aug-2023.

[C.4] Zhenguo Shi, Tao Gu, Yu Zhang, **Xi Zhang**. (2022). **mmBP: Contact-free Millimetre-wave Radar based Approach to Blood Pressure Measurement**. In *SenSys 2022, Core Rank A**.

[J.2] Yu Zhang, Tao Gu, **Xi Zhang**. (2022). **MDLdroidLite: A Release-and-Inhibit Control Approach to Resource-Efficient Deep Neural Networks on Mobile Devices**. *Transactions on Mobile Computing, Core Rank A**.

[J.3] Yu Zhang, Tao Gu, **Xi Zhang**. (2021). **MDLdroid: A ChainSGD-Reduce Approach to Mobile Deep Learning for Personal Mobile Sensing**. *Transactions on Networking, Core Rank A**.

[C.5] Yu Zhang, Tao Gu, **Xi Zhang**. (2020). **MDLdroidLite: a Release-and-Inhibit Control Approach to Resource-Efficient Deep Neural Networks on Mobile Devices**. In *SenSys 2020, Core Rank A**.

[C.6] Yu Zhang, Tao Gu, **Xi Zhang**. (2020). **MDLdroid: A ChainSGD-Reduce Approach to Mobile Deep Learning for Personal Mobile Sensing**. In *IPSN 2020, Core Rank A**.

Skills

- **AI Business Automation:** Agent orchestration (OpenClaw, Hermes, OpenGOAL), MCP (Model Context Protocol) integration, multi-agent coordination, autonomous workflow design — replacing labour-intensive back-office processes (data entry, classification, report generation, customer triage) with AI agents
- **LLM & Generative AI:** LLM integration for enterprise workflows, prompt engineering, retrieval-augmented generation, tool use, HuggingFace, LangChain, OpenAI / Anthropic API, fine-tuning for domain-specific tasks
- **Production AI Delivery:** End-to-end ML pipelines from architecture through application delivery, model optimisation for cost efficiency (quantisation, pruning), on-device and edge deployment, CI/CD integration, REST APIs — proven on two Fortune 500 AI-based applications
- **Deep Learning:** PyTorch (Expert), TensorFlow (Expert), CNN / LSTM / Transformer architectures, training and evaluation methodology, hyperparameter optimisation, transfer learning
- **Cloud & Infrastructure:** Docker, Kubernetes, AWS, GCP, Azure, MLflow, Airflow, Linux, Git — with focus on cost-efficient deployment for SME budgets
- **Languages & Data:** Python (Expert), Java, C++, SQL; NumPy, Pandas, Scikit-learn, Spark, PostgreSQL, MySQL, MongoDB

Founding Vision & Differentiation

- **Problem:** Australian Small and Medium Enterprises (SMEs) face the highest labour costs in the developed world combined with workflows still dependent on manual effort. Generic SaaS does not solve process-specific automation; bespoke consulting is too expensive.
- **Opportunity:** Agent orchestration (LLMs + tool use + workflow runtime) is now mature enough to replace entire back-office functions, not just augment them. Window to build the local trusted player is open now.
- **Differentiation:** Founder who can both *build the platform* (PhD-grade R&D + own agent stack) and *ship pragmatic commercial product* (two Fortune 500 AI-based applications integrated by customers).
- **Wedge:** High-friction SME back-office workflows — claims processing, document review, customer triage, compliance reporting — where labour cost is a board-level pain and AI delivers measurable ROI in weeks.

Certifications

- Oracle Certified Professional (OCP) – Oracle Database Administrator