Jiarong (Bill) Lu

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RELEVANT SKILL

Language: C, C++, VHDL, Lean, Python, HTML, G-code
Tools: VS code, GitHub, WordPress, Ollama, Docker, Open WebUI, STM32CubeIDE, Dify, CNC, STM32, OpenClaw, Premiere Pro, Photoshop, DaVinci Resolve, Autodesk Inventor, OBS, After Effect, Logic Pro, Adobe Audition, CAD, Unreal Engine, VMIX,

EXPERIENCE

Studica Limited **Ontario, Canada**
Embedded Software developper *Jun 2026 - April 2026*

- Developed and maintained firmware for five major STM32-based hardware products, including motion sensing, motor control, distance sensing, and color sensing systems, ensuring reliable operation.
- Leveraged AI tools to accelerate firmware development, automate repetitive tasks, and improve testing efficiency.
- Built an AI-assisted visualization tool for CNC-based sensor calibration, replacing manual G-code workflows and significantly improving calibration efficiency for repetitive tasks.
- Explored and prototyped potential AI applications in robotics for adaptive control and automation.

Waterloo Aerial Robotics Group (WARG) **Ontario, Canada**
Embedded Flight Software (EFS) develops team member *Oct 2024 - Present*

- A student design team at the University of Waterloo designs drones or fixed-wing aerial robots.
- Succeed in building the motor driver of the new driver architectur, the Attitude Manager with PID control function
- Working on modeling the thrust generated by the aircraft's motor(s) and propeller(s)

Shanghai Mindmatrix Technology Ltd **Shanghai, China**
Embedded Software developper *Jun 2025 - Sept 2025*

- Developed embedded firmware for BLDC motor control using STM32 microcontrollers, with real-time PWM, ADC, and communication via STM32CubeIDE and C/C++.
- Designed and fabricated custom multi-layer BLDC driver PCBs using Altium Designer; managed manufacturing with JLCPCB.
- Built a mechanical torque testing rig using Autodesk Inventor to evaluate motor performance under controlled load conditions.
- Currently implementing advanced motor control algorithms, including Field-Oriented Control (FOC) and finely tuned PID loops, to achieve precise angular positioning with <0.1° error.
- Successfully redesigned the PCB layout and reselected key components to achieve a compact 1.8 cm × 3.0 cm board, meeting strict integration requirements in constrained environments. Implemented STM32F446 microcontroller to enable precise brushless motor angle detection and three-phase output control.

PROJECTS

Glory Media AI transformation **Remote | Jun 2025 - Aug 2025**

- Built an iOS social app for media subscribers, enabling content sharing, interaction, and community engagement.
- Developed a data platform aggregating influencer data from Instagram and LinkedIn, along with brand marketing data.
- Applied AI models to analyze creator and campaign data, generating marketing recommendations for brands and media teams.
- Explored enterprise deployment of OpenClaw by designing skills and knowledge bases, enabling AI agents to function as domain-specific experts.
- Researched practical applications of AI in media workflows and knowledge systems, focusing on deployable, production-oriented solutions.
- Actively explored real-world AI applications by prototyping and evaluating AI-driven tools in content generation, automation, and decision support systems.

Automatic Water Quality monitor **Ontario, Canada | Sept 2024 - Dec 2024**

- Built a cost-effective water quality monitor using TDS sensors and STM32 microcontrollers
- Using C++ and C for coding the device and using Autodesk Inventor for building 3D model and printing the model

CERTIFICATIONS

Microsoft Certified: Azure AI Fundamentals
Issued Jun 2025

Microsoft Certified: Azure Fundamentals
Issued Jun 2025

EDUCATION

Candidate for Bachelor of Applied Science, University of Waterloo **Sept 2024 - Expected: June 2029**
Bachelor of Applied Science in Computer Engineering

Shanghai Weiyu High School **Sept 2021 - June 2024**
IBDP (International Baccalaureate Diploma Programme)