Junkai Li

(+1) 470-530-9081 | ssyjl10@outlook.com | Atlanta GA | GitHub | Linkedin

EDUCATION

Georgia Institute of Technology, Atlanta, GA — Sep. 2024 - Jul. 2026
Master's in Electrical and Computer Engineering (Honours) — GPA: 3.37/4.00

University of Nottingham Ningbo China (UNNC), Ningbo, CN — Sep. 2020 - Jul. 2024
B.Eng. in Electrical and Electronic Engineering (Honours) — GPA: 3.78/4.00

University of Nottingham (UoN), Nottingham, UK — Sep. 2022 - Jul. 2023
B.Eng. in Electrical and Electronic Engineering (Honours)

WORK EXPERIENCE

Siemens Power Automation Ltd. — Jul. 2024 - Aug. 2024
Data Analyst Intern, Product Department, ***Nanjing CN***

- Transitioned data workflows from Tableau to KNIME, streamlining pipeline logic and enhancing maintainability.
- Designed UiPath automation scripts to eliminate manual steps, enabling real-time updates across 10+ KNIME dashboards.

Fuyao Group Machinery Manufacturing — Aug. 2023 - Sep. 2023
Software Engineer Intern, R&D Technology Department, ***Fuzhou CN***

- Optimized PLC stamping module logic in TIA Portal, reducing cycle time for aluminum production.
- Integrated RFID-based control and developed robot alarm logic, improving operational reliability.
- Implemented a 9-position calibration method via HALCON software, enhancing positioning accuracy and workflow consistency.

ACADEMIC PROJECTS

Calibration and Fusion of Traffic Detection with Video and Radar, UNNC, Ningbo, CN — Sep. 2023 - Jul. 2024

- Collaborated with Zhejiang Communication Investment Group (CICO) to develop a camera-radar fusion system for highway traffic monitoring.
- Standardized radar datasets and applied LCSS and DTW algorithms, improving trajectory detection accuracy by 20%.
- Enhanced system reliability by reducing false positives through noise filtering and trajectory correction.

Two Switch Forward Converter with Regulated Output Voltage, UON, Nottingham, UK — Feb. 2023 - Jun. 2023

- Designed and implemented a two-switch forward converter to step down 230V AC to a regulated 8V DC output.
- Developed the PCB layout in KiCad; assembled and calibrated the hardware to ensure voltage stability under both 35V and 230V AC conditions.
- Simulated converter performance using PLECS to verify component accuracy and assess overall system feasibility.

Doppler Radar Tachometer Development, UON, Nottingham, UK — Sep. 2022 - Jan. 2023

- Programmed STM32 in C++ to acquire ADC signals and apply FFT for Doppler frequency extraction, leveraging DMA to enhance real-time data throughput and responsiveness.
- Designed and simulated digital logic using VHDL on Xilinx CPLD to display output on seven-segment LEDs.
- Integrated LCD encoder and LED modules to visualize detection frequency and speed, supporting a measurable range of 0–20 km/s.

Desktop-level 4-axis Laser Galvanometer Cutting Machine Design, UNNC, Ningbo, CN — Jun. 2022 - Aug. 2022

- Contributed to the electrical design, construction, and debugging of a desktop laser galvanometer cutting machine.
- Developed HMI interfaces using Visual Studio MFC and implemented multi-axis linkage control.
- Refined the layered cutting strategy through iterative testing, achieving a 96% improvement in diamond cutting efficiency over conventional methods.

Raspberry Pi-based Advanced Vehicle Routing Recognition, UNNC, Ningbo, CN — Feb. 2022 – Jun. 2022

- Integrated camera and buzzer modules in a Raspberry Pi system for automated vehicle control.
- Applied OpenCV for symbol recognition using Gaussian filtering, grayscale transformation, and contour extraction.
- Programmed vehicle behavior in C++ to trigger context-specific actions based on visual input.

TECHNICAL STRENGTHS

- **Programming Languages**: C, C++, Python, MATLAB, VHDL, SQL, Assembly
- **Tools & Platforms:** STM32Cube, Keil, ROS, Visual Studio, PLECS, KiCad, LTspice, OpenCV
- **Core Areas:** FFT, FIR/IIR, ADC, DMA, Embedded Systems, Signal Processing, DSP Filtering, Computer Vision
- **Languages:** English, Chinese

PATENTS

- **Li, J.**, Xiang, Y., Li, H., et al. "Equipment for double galvanometer diamond processing." Chinese Patent CN116038105A, 2023. Published.
- **Li, J.**, Xiang, Y., Li, H., et al. "Four-axis linkage laser processing method." Chinese Patent CN116174916A, 2023. Published.