

# FRANK FUNNY

CONTROLS AND  
AUTOMATION ENGINEER

## CONTACT



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<https://electronsandbits.github.io/>

## SKILLS

- C/C++, Python, SQL, RTOS/FreeRTOS, Zephyr RTOS, UML/SysML
- STM32, ESP32, Teensy
- ARM/RISC-V, ARM/RISC-V Assembly
- Real-Time Programming, Low-Level Programming
- Mechanical Design: Fusion, Solidworks
- PCB design: Altium Designer, KiCAD, Eagle
- Programming/Software: Ladder Logic, Function Block Diagram (FBD), Structured Text, MATLAB/Simulink, RSLogix
- Control Systems: PID Control, MPC, Distributed Control Systems (DCS), SCADA, PLC Programming, HMI
- Industrial Automation: Robotics Integration, Motion Control, Industrial

## PROFESSIONAL SUMMARY

I'm a Controls Engineer with expertise in real-time embedded systems, PLC programming, and automation. I specialize in tightly integrated hardware-software systems- from robotics, and drones to motion control and IIoT. I'm passionate about full-stack product development, from embedded firmware to electrical design, and thrive in building scalable, reliable systems that drive innovation in modern industry.

## EXPERIENCE

January 2022 - December 2024

### R&D Automation Engineer

Rockwell Automation, Sao Paulo, SP

- Developed Programmable Logic Controller (PLC) and Human-Machine Interface (HMI) programs for automation systems.
- Troubleshoot and optimized PLC and HMI code, ensuring peak system performance.
- Selected sensors, actuators, and control devices tailored to project requirements.

January 2014 - December 2021

### Automation Engineer

Siemens, Sao Paulo, SP

- Enhanced monitoring and control capabilities of existing systems by integrating IoT technologies, achieving a 10% reduction in operational costs through improved asset tracking.
- Collaborated with the R&D team to integrate new sensor technology that enhanced the precision of automated equipment by 12%.
- Customized and optimized PLC programming that resulted in a 15% increase in automation process speed, setting a company record for throughput.

January 2012 - December 2013

### Electrical Controls Engineer

Schneider Electric, Sao Paulo, SP

- Deployed an advanced PID controller scheme, enhancing system stability and achieving a 10% improvement in product quality consistency
- Redesigned control panel layouts for three product lines, which increased the serviceability and reduced average repair times by 20%.
- Designed and developed automation solutions for industrial customers using standard Schneider Electric products.

January 2009 - December 2009

Sensors, Machine Vision Systems,  
Hydraulic/Pneumatic Systems

- Protocols & Standards: Profibus, Modbus, OPC, MQTT, Ethernet/IP, ISA-88, ISA-95, IEC 61131-3

## **Automation Technician**

ABB, Sao Paulo, SP

- Assisted in programming PLCs for new production lines, which boosted operational efficiency by 20% within the first year of deployment.
- Helped design electrical schematics for new automation projects, contributing to a 10% increase in design efficiency..
- Maintained and troubleshoot PLC and HMI systems, reducing machinery downtime by 18%..

January 2005 - December 2006

## **Electrical Engineering Intern**

Phoenix Contact, Sao Paulo, SP

- Supported the development of a prototype control system for Tesla's manufacturing line, contributing to a successful pilot and subsequent full-scale rollout.
- Supported senior engineers in optimizing electrical schematics for new system installations.
- Developed and documented control logic and electrical drawings, ensuring compliance with industry standards and improving the accuracy of system installations by 15%.

February 2004 - February 2005

## **Electrical Engineering Intern**

Bosch, Sao Paulo, SP

- Assisted in the development of an electrical panel for automation control, which later became a standardized module for a range of products.
- Utilized CAD software to design custom control panels that improved operational safety, leading to a 15% decrease in safety incidents.
- Assisted customers with troubleshooting automation software issues, enhancing customer satisfaction metrics by 15%.

## **EDUCATION**

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September 2013

### **Master of Science (M.S.) in Systems Engineering - Control and Automation**

Polytechnic School of University of Sao Paulo, Sao Paulo, Brazil

December 2010

### **Bachelor of Science (B.S.) in Electrical Engineering**

Pontifical Catholic University of Sao Paulo, Sao Paulo, Brazil