Sidhdarth **Balasubramaniam**

(+33) 752293260 | sidhdarthsidhu@gmail.com | sidhdarthb

Summary

Robotics & Automation Engineer (MS) around 2 years of professional experience and specialization in Control Systems, Automation process, Mechatronics, PLC(SIMATIC & Schneider Electric) and Industrial protocols
Experienced with Siemens PLC, SINAMICS VFD, HMI(Simatic), Modbus, Ethernet, AutoCAD, ABB (IRB140), KUKA (KR6, KR5) & Fanuc Robots.

Education

Université de Lille
Lille, France

Master of Science (Robotics and Automation) *September 2019 - September 2021*

Coursework: Robotics - Algorithms and Control, Automatic Control of Mechanical Systems, Industrial Robotics, Industrial Automation, Siemens S7-1200 PLC & HMI using TIA, 3D Printing (Rapid Prototyping)

Kumaraguru College of Technology
Coimbatore, India

Bachelor of Engineering (Mechanical) *August2014 - June 2018*

Coursework: Kinematics and Dynamics of Machinery, Instrumentation and Control Engineering, Manufacturing Technology, Mechatronics, CAD/CAM, Basics of Electrical and Electronics engineering

Skills

Technical Expertise	Robotics, Process Automation, Troubleshooting equipment and complex system tests, Continuous Improvement
Programming	PLC- Ladder Logic, SCL, Functional Block Diagram & Grafcet, HMI, MATLAB, SCADA, Simulink, Python, C
Software Skills	AutoCAD electrical, Siemens TIA Portal, Siemens Step7, Wincc, Unity Pro, Vijeo designer, MS Office, SCADA
Hardware Skills	PLC, VFD, Ethernet, Profinet, RS 232, RS 485, DC, AC & Servo motors, Hydraulics, Pneumatics, Industrial Sensors
Languages	English - Fluent, Tamil, French - Intermediate, Dutch - Basics

Experience

Université d'Évry(IBISC Laboratory)
Paris, France

Robotics Engineer(Intern) *April 2021 - October 2021*

- Developed a new communication protocol between Roboguide(V9.1) software and python code via socket messaging API
- Created an Interlocking Algorithm to avoid the collision among the Fanuc robots(R-2000ic/165F)
- Used A* algorithm and PRM graph for path planning & task Sequencing in the application of car production line
- Research and development in the field of multi robot task sequencing and automatic path planning for cycle time optimization

Jagathshree castings
India

Manufacturing and Control Engineer *June 2018 - July 2019*

- Designed and manufactured IP68 standard stainless steel (AISI 304L) enclosures, SG Iron Castings, Alloy and Grey Cast Iron Castings
- Increased the productivity with 25 % by installing PLC control system to automate the logistics operation of the production plant
- Developed Ladder Logic programming for the conveyor mechanism using TIA Portal and integrated with HMI for data acquisition
- Programmed Variable Frequency Drive (VFD) and integrated it with PLC to control AC motor's torque by the varying its frequency
- Assisted with Senior Engineers and Plant Manager with troubleshooting, upgradation and installation of PLC and its peripherals

Projects

Automated Packaging Machine using Siemens S7 - 1200 PLC (Tech used – Siemens TIA, Factory IO, Ethernet, Feedback control system) *India*

- Created Ladder Logic Program using Siemens TIA Portal to control automated packaging machine using proximity sensors & AC motor.
- Established Ethernet TCP/IP protocol for device communication & troubleshooted to detect logical errors.
- Optimized the ladder logic code by using Bit Shift Registers (BSL, BSR) to keep tracking the history of the automated process

Automatic Liquid Level Control System (Tech used – Siemens TIA, Factory IO, Ethernet, Feedback control system) *Lille, France*

- Created a PLC program using Ladder logic, SCL & Function FC to control the liquid stored using Liquid Flow meter and Valves
- Animated the liquid level control in the SIMATIC HMI KTP400 to monitor and control by the authorized user and password protected
- Used PID controller to control the flow of the liquid by varying the speed of a DC motor water pump to reduce the error

Surface Treatment Kit using Schnider M340 PLC(Tech used – Unity Pro, Vijeo Designer, Ethernet, Feedback control system) *Lille, France*

- Created a PLC program using Grafcet, Ladder logic & structured text to control surface treatment kit using sensors & AC Motors
- Created an animation model for the system on Magelis HMI (Vijeo Designer) & linked it with PLC program using tags for remote control
- Configured the I/O for the system and established the Ethernet protocol for the communication between the PC and the PLC.

Autonomous Pick and Place using Industrial and Mobile Robot *Lille, France*

- Developed a trajectory path using Robot studio (ABB) and Program Maker (ABB) for Pick, place and Assembly of part
- Used different Gripper for the assembly and calculated the offset of Gripper of ABB (IRB140) 6 axis robot
- Programmed Robotino V2 (Robotino view) Mobile robot to move the part from one place to another place