SAMY TIMALSINA

Samy.timalsina@outlook.com | 2232 W Lindner Ave, Mesa, AZ | 234-232-8824

SUMMARY

- 5 Years of Hands-on experience in Software, Industrial automation control systems in the manufacturing industry.
- Software experience: Visual Studio, Azure DevOps, GIT, PostMan, SSMS, RsLogix500, Studio 5000
- Programming languages: C#, .NET, T-SQL, JavaScript, SFC, Structured text, ladder logic, HTML, CSS
- Hardware experience: AB Control Logix, Compact Logix, Magnemotion, UR Robot, Micro 820

EDUCATION

- **MS Electrical and Electronics Engineering (**GPA: 4.0/4.0) 2016-2018
  Youngstown State University, OH
  Rayen College of Engineering and Technology -ABET Accreditation
  Thesis: Detection of agglomeration in a fluidized bed using structure-function

- **BE Electrical Engineering** (GPA: 3.77/4.0) 2009-2013
  Tribhuvan University, Nepal

WORKING EXPERIENCE

- **Software Controls Engineer**, Auer Precision, Mesa, Arizona Sept 2019 – Present
  - Automated Rod Inspection: Developed custom image classification AI model using C# background services and .NET Machine Learning libraries to automate rod sorting with UR robots reducing manual inspection time by over 60%.
  - Automated Flatness Inspector: Developed a C# application and PLC program to interface with a Cognex Vision system, enabling real-time flatness measurements for frame plates ensuring a tolerance accuracy of ±0.012 mm.
  - Automated Glue Dispenser: Developed a PLC program for dispensing mastic glue on roofing parts and utilized an Omron Vision system for quality inspection achieving 1,500 parts per hour, increasing throughput by 50%.
  - Automated Conveyor System: Wrote a PLC program from scratch for a Magnemotion track system, using Station AOIs to configure different stations in a Rockwell PLC.
  - Database Solution: Developed a SQL database mapping between Ignition and PLC tags, wrote stored procedures, and deployed the Ignition server on an Azure virtual machine.
  - Automated Barcode Labeler: Created a Windows Forms application as a middleware service between UR robots and the Omron Vision system, capturing and storing barcode data in an Azure SQL database for traceability.
  - Automated Laser Marker: Developed a multithreaded C# wrapper application to automate IPG laser marking, acting as middleware between IPG hardware and AB PLC.
  - Software Solution: Developed an ASP.NET Core application to provide visibility into production data for Auer Precision automation equipment.
- **Jr. Programmer**, Ajax Tocco Magnethermic, Warren, Ohio June 2019 – Aug 2019
  - Developed custom UI program using VB, .NET, visual studio, and Factory talk view-HMI software for induction heating, forging, and quenching applications.
  - Developed windows service program using C# and Keyence laser marking builder software used to permanently identify power supply components product with a unique ID number for inventory
  - Modified and developed PLC programs using Ladder logic, Structured text, and Functional block diagrams, mainly in Studio 5000 and Micrologix PLC

- **Power Supply Test Engineer**, Ajax Tocco Magnethermic, Warren, Ohio Sept 2018– June 2019
  - Designed electrical schematics and BOM, specifically power and controls for induction heating power supplies using NEC codes and Autocad software
  - Speculate control panel components such as circuit breakers, fuses, analog, and digital IO sensors and integrate them with PLC and UR robots to automate induction heating of metals.
  - Troubleshoot and tested the power circuit of induction heating power supply and measured the high voltage 480 V ac, 680 V DC with High voltage probe, and 1000 Amps to 10000 Amps current with Rogowski coil.

- **Graduate Assistant**, Youngstown State University, Ohio Aug 2016– Aug 2018
  - Instructed 16 senior undergrad students in Control System and 16 sophomore students in Digital Circuit.
  - Designed controls system Allen Bradley Mirco 820 PLC hands-on lab manual dealing with the control of actuator, closed-loop systems, and PID controllers.

- Conducted electrical circuit theory labs and helped students use Oscilloscopes, Voltmeters, and Current meters, and graded labs.
- Contributed an ASP.net C# application to the electrical engineering department to record student lab grades and stored them in an SQL database.

➢ **Teaching Assistant**, IOE, Dharan, Nepal Dec 2014– Feb 2016

- Conducted theory classes on Controls systems, Electrical machines, and Electrical circuit theory for senior and sophomore students
- Designed simulation lab using MATLAB, C++ to help students understand the closed-loop system and dynamics of the controls system
- Conducted labs related to electrical machines such as induction motors, dc motors/generators, and synchronous motors for first-year students
- Assisted students with course materials during office hours and then recorded and posted grades outside the class location and online
- Served as the admin for the course discussion thread online and updated the online course pages
- Assured the proper setup of engineering labs and enforced lab rules to maintain safe and educational environments

PROJECTS

- Thesis: Detection of Agglomeration in a Fluidized Bed using Structure Function algorithm Aug 2017- Aug 2018
  (Associated with YSU final year project)
  - Gathered data from Babcock and Wilcox Company of Fluidized-bed system
  - Analyzed data using MATLAB to find the agglomeration before the system went into an unstable condition
  - Link: thesis link
- Designed and modeled computer systems using FPGA
  (Associated with YSU, Computer Architecture course)
  - Programmed Intel Altera FPGA board using assembly and C++
  - Designed Processing using SOPC Qsys tool in Quartus
  - Used concept of memory mapping, polling, and interrupt routines in Cyclone II/DE2 series board
- Garage door opener using micro 820 AB PLC
  (Associated with YSU, Controls system course)
  - Developed simulation program using ladder logic program in Micro 820 PLC
  - Mapped IO's using LED light and DC motor to show input/output relationship
- Design of Dynamic voltage restorer
  (Associated with Tribhuvan University final year project)
  - Analyzed voltage sag on distribution feeder during 3 phase ground fault condition
  - Modeled PID controller using Simulink to compensate for voltage lag in the feeder

CERTIFICATES

- UR robot e-Series Core Track
- Crash course on Robotics and Automation

SKILLS

- Passed LinkedIn skill assessment in C#
- Passed LinkedIn skill assessment in Object-Oriented Programming
- Completed online course on Ignition by Inductive automation

LICENSE

➢ FE Engineer Trainee, NCEES ID 18-708-69 May 2018-Present

AWARDS

- Graduate Assistantship, YSU Aug 2016 – May 2018
- Partial Scholarship, IOE, Tribhuvan University Dec 2009 – July 2013