Mr BHUSHAN SHIVAGUNDE
M.E. (Mechatronics)
Email: b.shivagunde@hotmail.com
Mobile No.: 9970604595 / 8007494606

Objective:

To work in an organization where innovation and excellence is the way of life, where my full potential will be explored & where I will get scope for development.

Educational Qualification:

EXAM	YEAR	UNIVERSITY/BOARD	PERCENTAGE
M.E.	2015	Pune University, Pune	7.7 CGPA
B. E.	2013	Solapur University, Solapur	63.67%
H.S.C.	2007	Maharashtra Board	67.17%
S.S.C.	2005	Maharashtra Board	66.66%

Experience:

Institute / Organization	Designation	Period
Karmayogi Engg. College, Shelve, Pandharpur	Assistant Prof	28/12/2015 to 25/05/2016
SKN Sinhgad College of Engineering, Korti, Pandharpur	Assistant Prof	15/06/16 to 18/09/17
Iraj Technologies, Bhosari, Pune	Software Engineer	01/10/2017 to 30/08/2018
P & B Technologies, Pune	Company Partner	01/09/2018 to 07/04/2021
Plazma Technologies	Software Engineer	08/04/2021 to 05/01/2022
DSS Systems and Software Technologies Pvt. Ltd.	Digital Engineer	10/01/2022 to Till Date

Software Knowledge:

- **Software** : AutoCAD–200, CATIA–5, Fusion 360, PLC, SCADA, HMI, OpenCV
- **Programming Languages:** C, C++ and Python

Industrial Training:

- **"TECHNOVISION PVT. LTD, Pune"**
  Completed 15 days industrial training at TECHNOVISION PVT. LTD, Manufacturer of industrial Pallets, Material handling equipment and vender of VOLKSWAGEN.

Projects Undertaken:

- **M. E. Dissertation *"Thermoelectric Waste Heat Recovery of LPG Stove"***
  Thermal efficiency of LPG stove is increased by thermoelectrically recovering the waste heat. The designed system requires minimal changes in existing LPG stove. Also maximum power point tracking system is used to efficiently harvesting the recovered energy. The system produces 15W of electric energy and at the same time it increases thermal efficiency of LPG stove by 1.27%.

- **B.E. Final year project *"Farm Seed Metering and Sprinkling"***
  Human power is used for Metered seeding and sprinkling at same time. The metered seeding reduces wastage of seed at turns. The system is so designed that very less power is required to drive it.

Interests:

- **SLAM Robot:**
  It is a two wheel drive robot, controlled by Raspberry pi and Arduino. It navigates through an unknown indoor environment by simultaneously mapping the environment and localising itself in it. It measures distance using camera and laser diode and measures its orientation using digital magnetic compass. A star algorithm is used to find the shortest route to navigate. Also, particle filter algorithm is used to map the surrounding environment and localize the robot. All computations are done by Raspberry pi and it gives command to Arduino via I2C.

- **Blob follower:**
  It is also a two wheel drive robot, controlled by Arduino and PC. It follows blob of given colour. OpenCV library is used for image processing and it controls Arduino with serial communication. Also, PID controller is used so that the robot can follow the blob more accurately.

- **3D Printer:**
  I have built a 3D printer based on Prusa Mendel i3 mendel. Marlin firmware is programmed into Arduino Mega board which controls the various stepper motors. It can print given 3D model using various materials like ABS, PLA etc. Slicing software like CURA is used to convert the 3d model into set of G-codes.

Industrial Projects:

- **Pharmaceutical Laser Engraver:**
  It is a 5W 450nm laser engraver, which uses CORE XY motion control algorithm. The entire mechanical system is designed by me. The electronic contains two stepper motors controlled by Arduino Mega 2560. The motion of the same is controlled by using GCODE. I also developed a windows based application, using Python language, to generate GCODEs based on client's variables, which is then saved into SD card and there after the SD card is put into the machine.

- **Home Automation System:**
  It is a 4 channel system with a fan control. The hardware is designed me. I used EAGLE software for PCB designing. The Automation System is connected to the local WiFi and can be controlled using mobile application. The mobile application is developed for both Android as well as Apple devices. The WiFi chip is programmed by me using C++ language.

- **Double Angle Grinding Machine:**
  It is a Special Purpose Machine (SPM), Designed for grinding the 'Cutters' at a given angle from both sides as well as at a given radius. The machine has a 3HP three phase Induction motor and a 0.5hp three phase Induction motor. The 0.5hp motor is associated with a VFD. The machine also has 3 Stepper motors for a X axis and two Y axes motion controls. The machine is operated using a GUI developed on Raspberry Pi, which then gives command to Arduino Mega 2560. I used EAGLE software for PCB designing. The GUI is developed using Python language and the control program using C++ language.

- **PLC Programming:**
  It was the PLC programming service provided by us, to the bellow making machine. The PLC was a Chines PLC for which we provided the programming service only.

- **Profile Projector:**
  It is Core XY based machine, to which a digital microscopic camera the mounted. The image captured by the camera is displayed on a 14inch monitor. Using individual motion in X or Y direction and the marking, dimensions of the objects can be measured with an accuracy of 2 microns. The Projector is also provided the facility of saving the measurements to USB pen drive.

- **AC Duct Cleaning Robot:**
  It is four wheel wireless robot. The Robot as Six DOF Robotic Arm. A 500mm brush is attached to the manipulator. I used EAGLE software for PCB designing for the robot as well as the remote. The robot need to perform cleaning operation in as AC duct for distance of 30 meter. Also live videos streaming of three cameras is transmitted over WiFi network.

- **PID Based Hydraulic System:**
  It is Finn Tube manufacturing machine, with three hydraulic cylinders. The displacement of each cylinder is measured using 26mm digital probes. This reading is used as input to the PID algorithm. A windows based application is developed using visual studio, using the DLL files provided by the probe manufacturer. The machine also has a 45KW 3 phase induction motor, which is controlled using Siemens micromaster 430 (65KW) VFD.

- **3D Plasma Cutting Machine:**
  It is an 8 DOF machine, which has Plasma torch mounted on 6 DOF FANUC Robotic arm. The Robot can cut different channel sections like I beam, C channel, Angle channel, Tube section, Pipe in 3D. It can also cut 2D profiles on a sheet size up to 40mm thickness. The on-site commissioning is at Jamshedpur. The machine has two ABB PLCs to control on field inputs and outputs.

Events Organized/ Conducted:

Name of Event	Institute	Responsibility
One Day Workshop on Arduino Robotics	SKN Sinhgad College of Engineering, Korti, Pandharpur	Main coordinator & Key Speaker
Arduino Based Path Following Robot	SKN Sinhgad College of Engineering, Korti, Pandharpur	Main coordinator & Key Speaker
Arduino Based Bluetooth Controlled Robot	SKN Sinhgad College of Engineering, Korti, Pandharpur	Main coordinator & Key Speaker

Personal Information:

Name	**:**	Bhushan M. Shivagunde.
Current Address	**:**	Flat No. 801, L3 Building, Bramha Suncity, Wadgaon Sheri, Pune 411014
Permanent Address	**:**	44/1/10,Takali Road, Pratap Nagar, Pandharpur, Dist.-Solapur, 413304.
Birth date	**:**	28th June 1990
Languages Known	**:**	English, Marathi and Hindi
Hobbies	**:**	Robotic, Fish Keeping

Declaration:

I hereby declare that the above-mentioned information is correct up to my knowledge and I bear the responsibility for the correctness of the above mentioned particulars.

Place:
Date:

Bhushan Shivagunde