Project assistant, CDRC E-MC^2 Lab, VJTI, Mumbai, India

📱 *+91 9370367075*

✉ *aschavekar_p22@ee.vjti.ac.in/ameybot@gmail.com*

Amey Sushil Chavekar, Project assistant

Education

2018-2022	**B.E., Electronics and Telecommunication Engineering**, *Finolex Academy of Management and Technology*, Ratnagiri, Maharashtra, India.
2016-2018	**Higher Secondary Education**, *Gogate Joglekar College*, Ratnagiri, Maharashtra, India.
2016	**Secondary School Certificate**, *R. B. Shirke Prashala*, Ratnagiri, Maharashtra, India.

Experience

2022-2024	Project Reaserch Assistant, at **COE CNDS, VJTI**, Mumbai, India : Hardwere security, hardwere pentesting, IOT security, Drone security etc.
2025-ongoing	Project Assistant, at **CDRC E-MC^2, VJTI**, Mumbai, India : Power System, Control System and Hybrid grid and FPGA-In-The-Loop.

Projects Participated and Developed

2024-ongoing	**Hardware-In-The-Loop implementation of 5DOF robotic arm :** By taking real world values of position of custom made robotic arm and reflecting it into the simulation and simultaneously controlling that robotic arm with simulation in real time is the main agenda of this project.
2024-ongoing	**Developed 13 DOF robotic Arm for humanoid robot :** Inspired by the human arm, the project tries to implement every possible movement of the human arm with the robotic arm with 13 DOFs.
2024-ongoing	**Development of exoskeleton for efficiently controlling humanoid robot :** Design and development of a prototype for humanoid exoskeleton for the robot. It is designed keeping in mind the natural flexibility and constraints of the human body.
2024-ongoing	**Development of realistic prosthetic silicon skin of human head, Eyes and Jaw :** Development of realistic skin using Smooth On silicon products by taking negative mold of real human head. For realistic appearance of robot, 3D printed eyes and jaw are in the development stage.
2025-ongoing	**Hardware-In-The-Loop of Closed loop Stepper motor controller using FPGA :** Analysis of Controller logic for Stepper motor and its FIL implementation.
2024	**FPGA-In-The-Loop realization of PID controller :** Complete FIL realization of a mathematical model of PID controller controlling a DC motor. A study on the proper methodology of FIL realization of a discrete mathematical model of any system in FPGA with a focus on optimization techniques used for HDL conversion stage of FIL.
2024-ongoing	**FPGA-In-The-Loop realization of Mathematical model of physical Inverter :** Performed load flow analysis of a microgrid system with grid forming inverter connected to load and infinite bus. The grid connected inverter model was run in the FPGA-In-The-Loop.
2024-ongoing	**Microgrid analysis using FPGA-in-the-Loop :** Performed load flow analysis of a microgrid system with grid forming inverter connected to load and infinite bus. The grid connected inverter model was run in the FPGA-In-The-Loop.

2023 **Test-bed setup for RT-HIL - Development of RT-HIL set up for implementation and validation of complex power grid.**

2021 **Replica of Perseverance Rover :** Using some YouTube reference i have build exact copy of perseverance rove in reduce scale of 1/3 of original one.here i have use ESP 32 camera module to control the rover tirelessly also for turning mechanism high torque servo motor are being used.

2021 **Robotic Dog :** As compare to MIT's cheetah robot i have build Robotic dog with similar functionalities with almost 250 percent less price.main reason for that is changing of cheetah actuators with servo motors and spring assembly.it is my BE final year project.

2021 **Bionic Spy spider robot :** It is a mini surveillance robot which replicates spider movement for locomotion using ESP 32 camera module for FPV video transmission. and to control 12 servo motor i have used arduino nano.it adopts the environmental colours by manually changing outer covers of its legs.

2021 **IoT based Irrigation system:** The Project scope included use of ESP32 as main controller through we can regulate water control using dc water pump, monitor soil moisture and humidity and temperature of surrounding. and we can regulate the watering of plants according to their needs.

2021 **Smart kitchen monitoring System :** The Project scope included use of node mcu we can monitor gas leak,presence of person in our absence,humidity and temperature also we can control 4 kitchen appliances such as frieze,light,exhaust fan etc.

2021 **Smart wheelchair :** It is a small scale prototype wheelchair specially for paralysed persons.which features a gesture control system by which wheel chair can move in all direction without joystick, it has voice control for movement and has panic alarm and obstacle avoiding mechanism and anti stairs falling system.

2021 **6 DOF Robotic arm :** The Project scope included use of different types of servomotors categorised by their torques. it is controlled by using android application through Bluetooth communication.

2017 **Train accident prevention system :** Primary i have done this project on my 9th grade with mechanical sensing unit that is ball bearing in touched with metal conductors and recent i remake that project with new digital sensing unit which is MPU6050 and communication modules.

Selected Publications and CVE IDs

CVE-2023-46033: D-Link (Non-US) DSL-2750U N300 ADSL2+ and (Non-US) DSL-2730U N150 ADSL2+ are velnerable to Incorrect acces

IEEE PES General Meeting (2025) Ojasvi S. Sonone, **Amey S. Chavekar**, Parthsarthi Goyanka, Sunny Kumar and Sushma R. Wagh, "Grid-forming Inverter Implementation using Arty A7 100T: A FIL for Microgrid Analysis,"

IEMTRONICS (2025) Ojasvi S. Sonone, **Amey S. Chavekar**, Parthsarthi Goyanka, Sunny Kumar and Sushma R. Wagh, "RT FIL Analysis for Inverter Integrated Microgrid using ARTY A7 100T,"

ICPC2T (2025) Sunny Kumar, **Amey S. Chavekar**, Abhishek Pandey, Prerna Goswami, Faruk Kazi, "Real-Time Hardware-in-Loop Testbed for Power System Analysis,"

ICCST (2024) Yasir Umair Mulla, **Amey S. Chavekar**, Sushant Mane, Faruk Kazi, "Threat modeling of cube orange based unmanned aerial vehicle system,"

ICCST (2024) **Amey S. Chavekar**, Yasir Mulla, Sushant Mane, Sunny Kumar, Faruk Kazi, "A Review of Drone Communication Protocols: Current Trends and Future Perspectives,"

ICCST (2023)	Shravan Singh, **Amey S. Chavekar**, Sushant Mane, Faruk Kazi, "Exploring Chip-Off Firmware Extraction Techniques and Challenges: Case Studies in Smart Plugs,"

Skills and Knowledge

Hardware:	Arduino, FPGA, RasPi, Soldering, grinding, Drilling, 3d printing, 3d designing, Circuit designing, mechatronics.
Languages:	C, C++, MATLAB, Simulink, HTML, CSS, Java, Git,Python,Mycro-Python,LaTeX
Software:	MS Office, Linux, Visual Studio, Visio, Github, Simulink, Autocad, Blender, Arduino IDE, Cura slicer, Xilix vivado, Easy eda.

Professional Membership

IEEE	Member (Number - 99603573)

Training Courses / Workshops Attended (Selected)

2024	**Beginner's Guide to IoT and Hardware Hacking, TCM Security.**
2024	**Practical API Hacking, TCM Security.**
2021	**30 day AI+ML Hackathon**
2020	**30 day virtual internship on "Design of salable electronics products",techno creation**
2020	**Hackathon code adventure 2.0 virtually**
2019	**Workshop on Cyber Systems Security**

Achivements

2022	**First Prize winner of TECH4GOOD 2022 project competition** VESIT IIC - Theme-Advance Technological innovations for societal good -Hardware track winner
2022	**Second Price winner in "VERSATALIA" National Level Project Competition** PVG's COET and GKPIM in association with IEEE Pune Section - Second price in Embedded system track
2022	**Winner of EW Project Challenge 2021** ElectronicWings - Judges choice prize winner
2022	**First runner-up of the National Level Online Project Competition "LOGICA"** JSPM RSCOE ACM Student Chapter Department of Computer of Engineering
2021	**Winner of India Automation Challenge 2021**Circuit Digest - Winner in project best by design category
2020	**Domain winner in printed circuit board**IRCWEB-EXPO(Indian Robotics Community)
2023	**First prize winner in online video contest for students on innovation in science Department of physics Shree Sivaji college of Arts, Commerce and science, Akola**
2023	**Winner of COVID-19 Product Ideathon Finolex Academy of Management and Technology**Ratnagiri - Winner in Undergraduate and above Category.
2019	**Won Consolation prize in University level Avishkar Research Convention** Won Consolation prize in amongst 105 colleges.
2015	**Won First prize in R.B.Shirke prasala Annual science festival**

References

Dr. S.R Wagh
Head of the Department, EE VJTI, Mumbai, India.
Mob: +91 9769025061

Email: srwagh@ee.vjti.ac.in