

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

("ವಿ ಟಿ ಯು ಅಧಿನಿಯಮ ೧೯೯೪" ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)

"ಜ್ಞಾನ ಸಂಗಮ", ಬೆಳಗಾವಿ-590018, ಕರ್ನಾಟಕ, ಭಾರತ

Visvesvaraya Technological University

(State University of Government of Karnataka. Established as per the VTU Act, 1994)

"Jnana Sangama" Belagavi-590018, Karnataka, India.



A PROJECT REPORT ON

“DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID SERVICE ROBOT”

Submitted in the partial fulfilment for the award of

BACHELOR OF TECHNOLOGY

in

ROBOTICS AND AUTOMATION

Submitted by

CHINMAYAGOURA PATIL 2VX20RA004

DIVYA L HEGDE 2VX20RA005

SANNIDHI J 2VX20RA010

YOGESH BADIGER 2VX20RA012

SUMANT MALAJI 2VX21RA408

Under the Guidance of

Dr. Anil Pol

Assistant Professor

Department of Mechanical Engineering, VTU, Belagavi-590018

2023-2024

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

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"Jnana Sangama" Belagavi-590018, Karnataka, India.



DECLARATION

I, **CHINMAYAGOU DA PATIL**, bearing **USN: 2VX20RA004**, a student of the eighth semester B.Tech in Robotics and Automation at Visvesvaraya Technological University, Belgaum, hereby declare that this dissertation entitled "**DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID SERVICE ROBOT**" embodies the report of my project completed in the Department of Mechanical Engineering, Visvesvaraya Technological University, "Jnana Sangama," Belagavi during the final semester under the guidance of **Dr. Anil Pol, Asst. Professor, Department of Mechanical Engineering, Visvesvaraya Technological University, Belagavi**. This report is submitted in partial fulfillment of the requirements for the award of Bachelor of Technology in Robotics and Automation at Visvesvaraya Technological University, Belagavi, during the academic year 2023–24.

Place: Belagavi

CHINMAYAGOU DA PATIL

Date:

2VX20RA004

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DECLARATION

I, **SANNIDHI J**, bearing **USN: 2VX20RA010**, a student of the eighth semester B.Tech in Robotics and Automation at Visvesvaraya Technological University, Belgaum, hereby declare that this dissertation entitled "**DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID SERVICE ROBOT**" embodies the report of my project completed in the Department of Mechanical Engineering, Visvesvaraya Technological University, "Jnana Sangama," Belagavi during the final semester under the guidance of **Dr. Anil Pol, Asst. Professor, Department of Mechanical Engineering, Visvesvaraya Technological University, Belagavi**. This report is submitted in partial fulfillment of the requirements for the award of Bachelor of Technology in Robotics and Automation at Visvesvaraya Technological University, Belagavi, during the academic year 2023–24.

Place: Belagavi

SANNIDHI J

Date:

2VX20RA010

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

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"Jnana Sangama" Belagavi-590018, Karnataka, India.



DECLARATION

I, **SUMANT MALAJI**, bearing **USN: 2VX21RA408**, a student of the eighth semester B.Tech in Robotics and Automation at Visvesvaraya Technological University, Belgaum, hereby declare that this dissertation entitled "**DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID SERVICE ROBOT**" embodies the report of my project completed in the Department of Mechanical Engineering, Visvesvaraya Technological University, "Jnana Sangama," Belagavi during the final semester under the guidance of **Dr. Anil Pol, Asst. Professor, Department of Mechanical Engineering, Visvesvaraya Technological University, Belagavi**. This report is submitted in partial fulfillment of the requirements for the award of Bachelor of Technology in Robotics and Automation at Visvesvaraya Technological University, Belagavi, during the academic year 2023–24.

Place: Belagavi

SUMANT MALAJI

Date:

2VX21RA408

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

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DECLARATION

I, **DIVYA L HEGDE**, bearing **USN: 2VX20RA005**, a student of the eighth semester B.Tech in Robotics and Automation at Visvesvaraya Technological University, Belgaum, hereby declare that this dissertation entitled "**DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID SERVICE ROBOT**" embodies the report of my project completed in the Department of Mechanical Engineering, Visvesvaraya Technological University, "Jnana Sangama," Belagavi during the final semester under the guidance of **Dr. Anil Pol, Asst. Professor, Department of Mechanical Engineering, Visvesvaraya Technological University, Belagavi**. This report is submitted in partial fulfillment of the requirements for the award of Bachelor of Technology in Robotics and Automation at Visvesvaraya Technological University, Belagavi, during the academic year 2023–24.

Place: Belagavi

DIVYA L HEGDE

Date:

2VX20RA005

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

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DECLARATION

I, **YOGESH BADIGER**, bearing **USN: 2VX20RA012**, a student of the eighth semester B.Tech in Robotics and Automation at Visvesvaraya Technological University, Belgaum, hereby declare that this dissertation entitled "**DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID SERVICE ROBOT**" embodies the report of my project completed in the Department of Mechanical Engineering, Visvesvaraya Technological University, "Jnana Sangama," Belagavi during the final semester under the guidance of **Dr. Anil Pol, Asst. Professor, Department of Mechanical Engineering, Visvesvaraya Technological University, Belagavi**. This report is submitted in partial fulfillment of the requirements for the award of Bachelor of Technology in Robotics and Automation at Visvesvaraya Technological University, Belagavi, during the academic year 2023–24.

Place: Belagavi

YOGESH BADIGER

Date:

2VX20RA012

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

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"Jnana Sangama" Belagavi-590018, Karnataka, India.



DECLARATION

We, the students of eighth semester B-Tech Robotics and Automation, Visvesvaraya Technological University, Belgaum, hereby declare that this project report entitled **"DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID ROBOT"** embodies the details of our project completed at the Department of Mechanical Engineering, Visvesvaraya Technological University, "Jnana Sangama," Belagavi, under the guidance of **Dr. Anil Pol, Professor of the Department of Mechanical Engineering, Visvesvaraya Technological University, Belagavi.** This report is submitted in partial fulfillment of the award of Bachelor of Technology in Robotics and Automation at Visvesvaraya Technological University, Belagavi, during the academic year 2023–24.

CHINMAYAGOUDA PATIL

2VX20RA004

DIVYA L HEGDE

2VX20RA005

SANNIDHI J

2VX20RA010

YOGESH BADIGER

2VX20RA012

SUMANT MALAJI

2VX21RA408

Place: Belagavi

Date:

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DEPARTMENT OF MECHANICAL ENGINEERING

CERTIFICATE

This is to certify that the project (18RAP83) work titled **“DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID ROBOT”** is a bonafide work completed by **Mr. CHINMAYAGOUDA PATIL** bearing **USN: 2VX20RA004**, a student of the Department of Mechanical Engineering, Visvesvaraya Technological University, “Jnana Sangama,” Belagavi, in partial fulfillment of the requirements for the award of Bachelor of Technology in Robotics and Automation of Visvesvaraya Technological University Belagavi during the academic year 2023–24. It is certified that all the corrections or suggestions have been approved as they satisfy the academic requirements concerning the project work prescribed by VTU, Belagavi, for the said degree.

Name of the Examiners:

1) _____

2) _____

Dr. Anil Pol

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CERTIFICATE

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DEPARTMENT OF MECHANICAL ENGINEERING

CERTIFICATE

This is to certify that the project (18RAP83) work titled **“DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID ROBOT”** is a bonafide work completed by **Ms. SANNIDHI J**, bearing **USN: 2VX20RA010**, a student of the Department of Mechanical Engineering, Visvesvaraya Technological University, “Jnana Sangama,” Belagavi, in partial fulfillment of the requirements for the award of Bachelor of Technology in Robotics and Automation of Visvesvaraya Technological University Belagavi during the academic year 2023–24. It is certified that all the corrections or suggestions have been approved as they satisfy the academic requirements concerning the project work prescribed by VTU, Belagavi, for the said degree.

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Dr. Anil Pol

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"Jnana Sangama" Belagavi-590018, Karnataka, India.



DEPARTMENT OF MECHANICAL ENGINEERING

CERTIFICATE

This is to certify that the project (18RAP83) work titled **"DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID ROBOT"** is a bonafide work completed by **Mr. SUMANT MALAJI**, bearing **USN: 2VX21RA408**, a student of the Department of Mechanical Engineering, Visvesvaraya Technological University, "Jnana Sangama," Belagavi, in partial fulfillment of the requirements for the award of Bachelor of Technology in Robotics and Automation of Visvesvaraya Technological University Belagavi during the academic year 2023–24. It is certified that all the corrections or suggestions have been approved as they satisfy the academic requirements concerning the project work prescribed by VTU, Belagavi, for the said degree.

Name of the Examiners:

1) _____

Dr. Anil Pol

2) _____

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"Jnana Sangama" Belagavi-590018, Karnataka, India.



DEPARTMENT OF MECHANICAL ENGINEERING

CERTIFICATE

This is to certify that the project (18RAP83) work titled "**DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID ROBOT**" is a bonafide work completed by **Mr. YOGESH BADIGER**, bearing **USN: 2VX20RA012**, a student of the Department of Mechanical Engineering, Visvesvaraya Technological University, "Jnana Sangama," Belagavi, in partial fulfillment of the requirements for the award of Bachelor of Technology in Robotics and Automation of Visvesvaraya Technological University Belagavi during the academic year 2023-24. It is certified that all the corrections or suggestions have been approved as they satisfy the academic requirements concerning the project work prescribed by VTU, Belagavi, for the said degree.

Name of the Examiners:

1) _____

2) _____

Dr. Anil Pol

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CERTIFICATE

This is to certify that the Project (18RAP83) work, titled **"DESIGN AND DEVELOPMENT OF VERSATILE HUMANOID SERVICE ROBOT,"** is a bonafide work completed by the students of the Department of Mechanical Engineering, Visvesvaraya Technological University, "Jnana Sangama," Belagavi, in partial fulfillment for the award of Bachelor of Technology in Robotics and Automation of Visvesvaraya Technological University, Belagavi, during the academic year 2023–24. It is certified that all the corrections or suggestions have been approved as they satisfy the academic requirements concerning the project work prescribed by VTU, Belagavi, for the said degree.

CHINMAYAGOURA PATIL

2VX20RA004

DIVYA L HEGDE

2VX20RA005

SANNIDHI J

2VX20RA010

YOGESH BADIGER

2VX20RA012

SUMANTH MALAGI

2VX21RA408

Name of the Examiners:

1) _____

Dr. Anil Pol

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Submitted in the partial fulfilment for the award of

BACHELOR OF TECHNOLOGY

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ROBOTICS AND AUTOMATION

Submitted by

CHINMAYAGOURA PATIL

2VX20RA004

Under the Guidance of

Dr. Anil Pol

Assistant Professor

Department of Mechanical Engineering, VTU, Belagavi.590018

2023-2024

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Submitted in the partial fulfilment for the award of

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in

ROBOTICS AND AUTOMATION

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2023-2024

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

("ವಿ ಟಿ ಯು ಅಧಿನಿಯಮ ೧೯೯೪" ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)

"ಜ್ಞಾನ ಸಂಗಮ", ಬೆಳಗಾವಿ-590018, ಕರ್ನಾಟಕ, ಭಾರತ

Visvesvaraya Technological University

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A PROJECT REPORT

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