



Lokmanya Tilak Jankalyan Shikshan Sanstha's
PRIYADARSHINI COLLEGE OF ENGINEERING, NAGPUR
Affiliated to R.T.M. Nagpur University
Near CRPF Campus, Hingna Road, Nagpur-440 019, Maharashtra (India)
AICTE ID No. 5435581 : DTE code No. 4123 : University Code No. 278
Department of Computer Science and Engineering



Research Based Learning



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Name of Activity: National Youth Day- Innovation and Start Up Challenge

Date: 19/01/2024

Venue: Priyadarshini College of Engineering

Sem/Section : VIII

Participants: Nikhil Dahale, Atul Thakare, Sumit Fursule, Anurag Vaidya

Objectives:

Visually impaired individuals struggle with navigating in their environment safely, often encountering obstacles, difficulty finding destinations, and risks from hazards like fires. Traditional aids offer limited support, highlighting the need for a comprehensive real-time solution. "E-Navigation: The Boon For Visually Impaired" is a smart device that integrates ultrasonic sensors, GPS technology, fire sensors, and location tracking. Ultrasonic sensors detect obstacles and alert users with a buzzer beep, while GPS provides real-time navigation. Fire sensors detect smoke and activate a vibrator to warn of potential fires. Location tracking enables family members to monitor the user's whereabouts, enhancing safety and independence.

Outcome: Getting the First Prize in the National Youth Day- Innovation and Start Up Challenge highlights the ingenuity and societal relevance of the project, paving the way for future advancements and potential commercialization. "E-Navigation: The Boon For Visually Impaired" contributes to a more inclusive society by addressing mobility challenges and advocating for equal opportunities for visually impaired individuals.





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Name of Activity: AI & IOT Project Competition COMP-EX 2024

Date: 25/01/2024 to 28/01/2024

Venue: Reshimbagh Ground Nagpur

Sem/Section : VIII

Participants: Nikhil Dahale, Atul Thakare, Sumit Fursule, Anurag Vaidya

Objectives:

The objective of the project, E-Navigation: The Boon for Visually Impaired, is to develop an innovative navigation system that empowers visually impaired individuals to move independently and safely in various environments. By leveraging cutting-edge technology, the project aims to enhance accessibility, ensure user-friendly operation, and improve the overall quality of life for the visually impaired community.

Overview: E-Navigation is a technological solution designed to address the challenges faced by visually impaired individuals in navigating their surroundings. The system integrates advanced sensors, artificial intelligence (AI), and user-centric design to provide real-time assistance and obstacle detection. Features include voice-guided navigation, haptic feedback for directional cues, and environment mapping to ensure seamless mobility in both indoor and outdoor settings.

Outcome: Winning the First Prize in the AI & IOT Project Competition COMP-EX 2024 validates the potential and impact of E-Navigation. The project's key outcomes include:

1. **Enhanced Mobility:** E-Navigation empowers visually impaired users by providing precise navigation support, enabling them to travel independently with confidence.
2. **Increased Safety:** The system's advanced obstacle detection and real-time alerts significantly reduce the risk of accidents in unfamiliar or crowded environments.
3. **Inclusive Design:** The user-friendly interface ensures accessibility for individuals with varying levels of technological familiarity, promoting inclusivity and widespread adoption.
4. **Innovation Recognition:** Winning the challenge highlights the ingenuity and societal relevance of the project, paving the way for future advancements and potential commercialization.
5. **Community Impact:** E-Navigation contributes to a more inclusive society by addressing mobility challenges and advocating for equal opportunities for visually impaired individuals.

The recognition received through this prestigious award underscores the transformative potential of E-Navigation and motivates further development and deployment to benefit the visually impaired community on a larger scale.



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LOKMAT TIMES

Community News

PCE gets first prize in project contest on e-navigation



The students of Priyadarshini College of Engineering receiving the award during COMP-EX-2024.

The Department of Computer Science and Engineering of Priyadarshini College of Engineering won first prize in AI and IOT project Competition on E-Navigation, the boon for visually Impaired, at COMP-EX- 2024. The students of 8th semester Nikhil Dahale, Atul Phakare, Sumit Fursule won first pin AI & IOT project Competition COMP-EX 2024, on E- Navigation, the boon for

visually impaired during 'COMP-EX' held at Reshimbagh Ground Nagpur. D Leena Patil, HoD, CSE and Mentor guided the student and has received the prize. D V M Nanoti, director (Engg. LTJSS, Dr S A Dhale, principal of Priyadarshini College of Engineering, Dr G M Asutkar, vice- principal PCE congratulated the students for winning the prize.

Nagpur First
Page No. 2 Feb 06, 2024



थोडक्यात

प्रियदर्शिनीचे 'एआय' स्पर्धेत यश

नागपूर : प्रियदर्शिनी कॉलेज ऑफ इंजिनीअरिंगच्या कम्प्युटर सायन्स आणि इंजिनीअरिंग विभागाने 'कॉम्प-एक्स-२०२४' मध्ये ई-नेविगेशनवरील एआय आणि आयओटी प्रकल्प स्पर्धेत प्रथम पारितोषिक जिंकले. कॉलेजचे अंतिम सत्रातील विद्यार्थी निखिल डहाळे, अतुल ठाकरे आणि सुमित फुरसुले यांचा या चमूत समावेश होता. विभागप्रमुख डॉ. लीना पाटील यांच्या मार्गदर्शनात विद्यार्थ्यांनी हे यश संपादित केले. पारितोषिकाचे संस्थेच्या इंजिनीअरिंग विभागाचे संचालक डॉ. व्ही. एम. नानोटी, प्राचार्य डॉ. एस. ए. ढाले, उपप्राचार्य डॉ. जी. एम. आसुटकर यांनी स्वागत केले आहे.



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Name of Activity: HACKATHON 2.0

Date: 14/02/2024

Venue: Cummins College of Engineering, Nagpur.

Sem/Section : VIII

Participants: Nikhil Dahale, Atul Thakare, Sumit Fursule, Anurag Vaidya

Objectives:

"E-Navigation: The Boon For Visually Impaired" is a smart device that integrates ultrasonic sensors, GPS technology, fire sensors, and location tracking. Ultrasonic sensors detect obstacles and alert users with a buzzer beep, while GPS provides real-time navigation. Fire sensors detect smoke and activate a vibrator to warn of potential fires. Visually impaired individuals struggle with navigating in their environment safely, often encountering obstacles, difficulty finding destinations, and risks from hazards like fires. Traditional aids offer limited support, highlighting the need for a comprehensive real-time solution. Location tracking enables family members to monitor the user's whereabouts, enhancing safety and independence.

Outcome: Getting the Third Prize in the HACKATHON 2.0 underscores the transformative potential of E-Navigation and motivates further development and deployment to benefit the visually impaired community on a larger scale.

"E-Navigation: The Boon For Visually Impaired" contributes to a more inclusive society by addressing mobility challenges and advocating for equal opportunities for visually impaired individuals.





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Name of Activity: AVISHKAR Project Competition

Date: 20/02/2024

Venue: Government College of Engineering, Nagpur.

Sem/Section : VIII

Participants: Nikhil Dahale, Atul Thakare, Sumit Fursule, Anurag Vaidya

Objectives:

The active participation of students in various innovative project competitions would help them get in-depth insights on their solutions and scope for improvements.

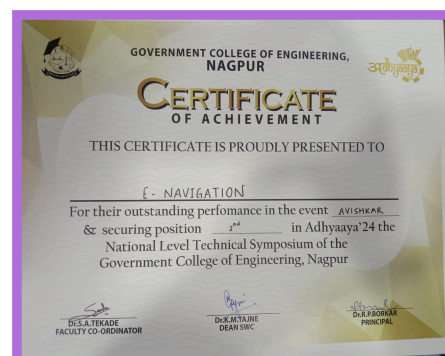
"E-Navigation: The Boon For Visually Impaired" is a smart device that integrates ultrasonic sensors, GPS technology, fire sensors, and location tracking. Ultrasonic sensors detect obstacles and alert users with a buzzer beep, while GPS provides real-time navigation. Fire sensors detect smoke and activate a vibrator to warn of potential fires.

Location tracking enables family members to monitor the user's whereabouts, enhancing safety and independence.

Outcome:

The recognition received underscores the transformative potential of E-Navigation and motivates further development and deployment to benefit the visually impaired community on a larger scale.

E-Navigation empowers visually impaired users by providing precise navigation support, enabling them to travel independently with confidence.



Name of Activity: TECH-KNOWLEDGE Project Competition

Date: 12/03/2024

Venue: Swaminarayan Siddhanta Institute of Technology, Nagpur

Sem/Section : VIII

Participants: Nikhil Dahale, Atul Thakare, Sumit Fursule, Anurag Vaidya

Objectives:

The exposure of students to innovative project competitions would help the students to enhance their skill set towards solving the real time problems of society. The active participation in various innovative project competitions would help the students to get in-depth insights on their solutions and scope for improvements.

"E-Navigation: The Boon For Visually Impaired" is a smart device that integrates ultrasonic sensors, GPS technology, fire sensors, and location tracking. Ultrasonic sensors detect obstacles and alert users with a buzzer beep, while GPS provides real-time navigation. Fire sensors detect smoke and activate a vibrator to warn of potential fires.

Location tracking enables family members to monitor the user's whereabouts, enhancing safety and independence.

Outcome:

The recognition received underscores the transformative potential of E-Navigation and motivates further development and deployment to benefit the visually impaired community on a larger scale.

E-Navigation empowers visually impaired users by providing precise navigation support, enabling them to travel independently with confidence.





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Name of Activity: SHIKHAR-2024 Project Competition and Paper Presentation

Date: 16/03/2024

Venue: Jhulelal Institute of Technology, Nagpur

Sem/Section : VIII

Participants: Nikhil Dahale, Atul Thakare, Sumit Fursule, Anurag Vaidya

Objectives:

"E-Navigation: The Boon For Visually Impaired" is a smart device that integrates ultrasonic sensors, GPS technology, fire sensors, and location tracking. Ultrasonic sensors detect obstacles and alert users with a buzzer beep, while GPS provides real-time navigation. Fire sensors detect smoke and activate a vibrator to warn of potential fires. Visually impaired individuals struggle with navigating in their environment safely, often encountering obstacles, difficulty finding destinations, and risks from hazards like fires. Traditional aids offer limited support, highlighting the need for a comprehensive real-time solution. Location tracking enables family members to monitor the user's whereabouts, enhancing safety and independence.

The exposure of students to innovative project competitions and paper presentations would help the students to enhance their skill set towards solving the real time problems of society. The active participation in various innovative project competitions would help the students to get in-depth insights on their solutions and scope for improvements. .

Outcome:

Winning the First Prize in the SHIKHAR-2024 Project Competition and Paper Presentation validates the potential and impact of E-Navigation. The project's key outcomes include:

- E-Navigation empowers visually impaired users by providing precise navigation support, enabling them to travel independently with confidence.
- The system's advanced obstacle detection and real-time alerts significantly reduce the risk of accidents in unfamiliar or crowded environments.
- The user-friendly interface ensures accessibility for individuals with varying levels of technological familiarity, promoting inclusivity and widespread adoption.
- Winning the challenge highlights the ingenuity and societal relevance of the project, paving the way for future advancements and potential commercialization.
- E-Navigation contributes to a more inclusive society by addressing mobility challenges and advocating for equal opportunities for visually impaired individuals.



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Name of Activity: Project Competition “Smart Human Following Trolley System”

Date: 12/03/2024

Venue: Swaminarayan Siddhanta Institute of Technology, Nagpur

Sem/Section : VIII Sem

Participants: A group of 4 students

Objectives:

The exposure of students to innovative project competitions would help the students to enhance their skill set towards solving the real time problems of society. The active participation in various innovative project competitions would help the students to get in-depth insights on their solutions and scope for improvements.

- A human following trolley system can assist Elderly and Physically Challenged Shoppers allowing them to shop independently and comfortably without relying on external support
- Human following trolleys eliminate the need for Human-following trolley systems in shopping environments that can showcase innovation and modernization in retail operations..

Outcomes:

Project Competitions involve improvements for a product or service. When designing a project, it's important to know what your project outcomes are so you have a way of measuring your success and understand what your overall goal is

- This innovative solution offers enhanced mobility, convenience, and efficiency in various applications.
- The development and implementation of a human-following trolley using IoT technology represent a significant advancement in transportation and logistics automation.



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Name of Activity: “AI Virtual Mouse” Best Paper Award in 23rd ISTE National Annual Students Convention

Date: 04/03/2023

Venue: Priyadarshini College of Engineering , Nagpur

Sem/Section : VIII Sem

Participants: A group of 5 students

Objectives:

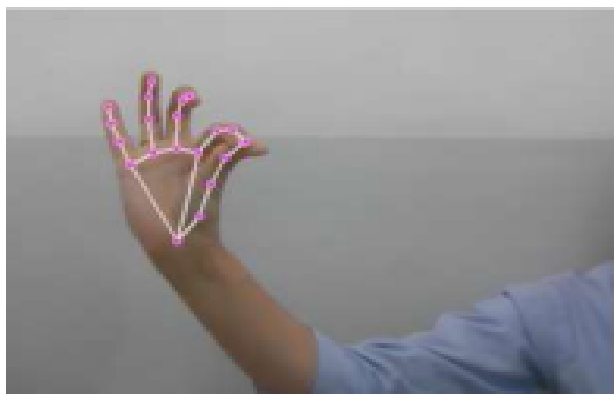
The main objective of the AI virtual mouse system is to develop an alternative to the regular and traditional mouse system to perform and control the mouse functions, and this can be achieved with the help of a web camera that captures the hand gestures and hand tip and then processes these frames to perform the particular mouse function such as left click, right click, and scrolling function.

The purpose of the Award is to recognize and promote quality contributions to academic research and writing among scholars and students who present and publish paper.

Outcomes:

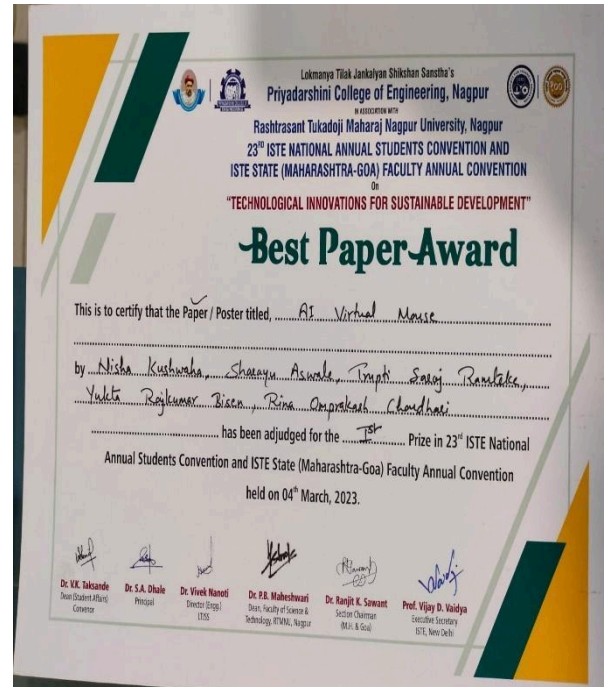
AI virtual mouse can be used for real-world applications and Persons with disabilities in their hands can use this system to control the mouse functions in the computer ,contributing to society.

ISTE awards recognize excellence in original research, innovative thinking, and the quality and impact of published work.





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Name of Activity: Patent on IoT based Project “Smart Human Following Trolley System”

Date: 15/04/2024

Venue: Indian Patent Office, Office of Controller General of Patents, Designs & TradeMarks, Mumbai

Sem/Section : VIII Sem

Participants: A group of 4 students

Objectives:

1. **Elderly and Physically Challenged Shoppers:** A human following trolley system can assist such shoppers, allowing them to shop independently and comfortably without relying on external support.
2. **Enhanced Shopping Experience:** Human following trolleys eliminate the need for shoppers to manually push or carry heavy loads, allowing them to focus on selecting items and enjoying their shopping trip.
3. **Increased Convenience:** Human following trolleys enables shoppers to navigate through aisles and crowded spaces more easily, reducing the physical effort required and making the shopping process more efficient.
4. **Improved Efficiency:** A human-following trolley equipped with IoT technology can assist shoppers by providing real-time navigation guidance, product recommendations, and promotional offers based on their preferences and shopping history, thereby enhancing the overall shopping experience and increasing sales for retailers.
5. **Technological Innovation:** Human-following trolley systems in shopping environments can showcase innovation and modernization in retail operations..

Outcomes:

1. The development and implementation of a human-following trolley using IoT technology represent a significant advancement in transportation and logistics automation.
2. The integration of IoT enables scalability and adaptability, making the human-following trolley suitable for a wide range of environments and scenarios.





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3. Assisting shoppers in crowded malls, transporting luggage in airports, or streamlining logistics in industrial settings, this technology holds immense potential to revolutionize the way we move and transport goods.
4. This innovative solution offers enhanced mobility, convenience, and efficiency in various applications.

Overall, Patent Publication enhanced students' product development skills and a contribution to society.

 Office of the Controller General of Patents, Designs & Trade Marks Department for Promotion of Industry and Internal Trade Ministry of Commerce & Industry, Government of India		 INTELLECTUAL PROPERTY INDIA INVENTIONS • DESIGNS • TRADE MARKS GEOGRAPHICAL INDICATIONS
Application Details		
APPLICATION NUMBER	202421030172	
APPLICATION TYPE	ORDINARY APPLICATION	
DATE OF FILING	15/04/2024	
APPLICANT NAME	1. DR. NAMRATA MAHAKALKAR 2. DR. LEENA PATIL 3. DR. RAHUL PETHE 4. SUMIT BHAGAT 5. MITALI WAIRAGADE 6. SHRUTI BHARDWAJ 7. LEENA BAMBAL	
TITLE OF INVENTION	SMART HUMAN FOLLOWING TROLLEY SYSTEM.	
FIELD OF INVENTION	MECHANICAL ENGINEERING	
E-MAIL (As Per Record)		
ADDITIONAL-E-MAIL (As Per Record)	rahul2480@gmail.com	
E-MAIL (UPDATED Online)		
PRIORITY DATE		
REQUEST FOR EXAMINATION DATE	15/04/2024	
PUBLICATION DATE (U/S 11A)	14/06/2024	





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Organized by: Computer Science & Engineering Department

Event: Participation of students in National Project Competition (National Youth Day - 2023)

Date: 19-01-2023

Sem/Section : VIII Sem and VI Sem

Venue: PCE Nagpur

Participants: 4 project groups of 4-5 students

Event Coordinator: Dr. P. M. Chaudhari, Associate Professor, CSE Deptt.

Objectives:

1. Build Skills and Creativity: Encourage students to use what they've learned in new and practical ways.
2. Boost Confidence and Connections: Help students improve their presentation skills and meet new people in their field.

Outcomes:

1. Better Opportunities: Students gain useful skills and recognition, which can help in their studies and future careers.
2. Personal Growth: Participation increases students' confidence and helps them grow personally.

Photos of National Youth Day 2023

