Department of
Applied Electronics and Instrumentation Engineering
presents

# BREEZE

Departmental mazagine, 2022

# Vision

To develop skilled Electronics and Instrumentation Engineers by providing learning ambience for academics & research leading to global competence with high academic credentials and to make the department recognized by the industries and teaching community.

# Mission

- To prepare the students competent in the field of sensors, measurement, instrumentation, control, automations, signal processing, communication and computational techniques, etc. which are essential for industries, research organizations or higher studies.
- To imbibe curiosity to students through industry-department interaction programs, workshops, seminars leading to better awareness about latest technology, research trends and to provide the students educational pathways for optional career choices.
- To motivate the students towards lifelong learning and towards betterment of society by imparting practical skills.

# Message from HoD's Desk



Our Department of Applied Electronics and Instrumentation Engineering, Heritage Institute of Technology, Kolkata always keeps focus on development of students. In support of digging so many hidden talents of our beloved students, I would like to announce with immense satisfaction and pleasure the publication of the next issue of "Breeze", the yearly students' e-magazine. In the midst of a pandemic situation, we tried our best to publish the previous issue of the magazine and finally succeeded. Now, our institute is ready to welcome students in its lap and consequently, we are going to organize again the most anticipated event at our department in May 2022 i.e., the 5th Inter College Competition on Prototype Design for Mankind (ICCPDM). Moreover, we are happy to see that all of our students are involved in hands-on projects and laboratory experiments. I would like to congratulate my students for showcasing their skills and happy to mention that they equally took the challenge of publishing "Breeze" within a short period of time.I would also liketo convey my heartfelt thanks to all faculty members, technical staff and students who haveworked sincerely to lend its final shape. I also congratulate the editorial team, especially Ms. Manshi Raj (4th Year) for bringing out the present issue of e-magazine.

**Prof. (Dr.) Madhurima Chattopadhyay**
**(Head of the Department, AEIE)**

# Content

# Write-ups

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## Is technology making us dumb to think?

As an Engineering student and as living in the era of Industry 4.0 we can feel the contribution of technology morning to night in our daily lives. With the overwhelming usage of technology even the natural cycle of morning-night shift has been reversed. People nowadays are awake in overnight and completing their office jobs or study in the midnight depriving of sleep. We are too much active in night and seldom can experience the early morning rising. Smart phones, laptops, macbook, smart watches have taken the usage of pen, pencils, paper, Books. Industrial revolution has transformed for the boon of the mankind. But are we using that precisely and accurately in proper technical manners? Whatsapp, Messengers, Orkuts were discovered to share/transfer messages, connection to be socially connected. To convey the sender's intuitive thought and important message to the receiver whatsapp messenger is day by day upgrading their new features such as location sharing, status update etc. But most of the users are misconducting these privileges with another means. Whatsapp, messengers have been a place to create spam messages, unwanted & sexually abusive chat groups for enjoyment purpose or for creating memes. So we the human being have evolved so much and have used our intellect, hard work, dedication to reach the technology at this superior level. Researchers, industrialists, Engineers, data scientists, mathematicians, Software engineers have given so much persistent hard work so that we have achieved such a great era of technologically driven smart decade. Their hard work, committed contribution and intellect have aided to reach the supreme level so that for a small tax/bill payment calculation we can perform it just in a second by using our smartphones calculator feature. But are these over privileges and over comfort making us nerd to use our brain in productive and virtuous direction? Answer is still pending to us. And we should give it by stopping the inappropriate, unwise usage of technology.

Abhishek Mukherjee, AEIE
MTech

# Evolution Of Communication Technology

It is said that Change Is The Only Constant and keeping this statement in mind I am presenting this article highlighting how even Technology is subject to constant change especially when it comes to modes of communication. Communication has been very essential in our lives since the beginning as it helps in developing understanding among people. And as far as communication is concerned it can be considered as an ongoing process ,evolution of technology being the prime reason for so. Without communication, solving problems, reading, writing and understanding would all be so very difficult !

Communication can be defined as a process of exchanging words, signs and information with others. It can be done either verbally or nonverbally depending on the situation. Now let us have a look at the history of human communication starting with cave paintings and rock paintings (one of the oldest known methods of communication)these paintings were primarily used to mark territories and also record major historical events. Next, we have "Smoke Signals" a technique which was mostly used by the Chinese guards in which they released smoke into the air in order to convey important information ,a famous Greek Historian Polybius used smoke signals to represent the alphabet.

Then we have the use of carrier pigeons to convey messages, pigeons have a great ability to identify directions accurately even after traveling long distances. People used to attach small letters to their necks, hoping they would fly to the receiver .Pigeons were also used by Ancient Romans to communicate necessary information during wars. Gradually with raising awareness people started to use courier services and letters were transferred from one person to another through postal services.

A Frenchman De Valyer started a postal system in 1653. The use of mailboxes and delivery of letters was done through the system. These systems were organized in India, China, Persia, and Rome first and then gradually it spread to other countries as well. Then came newspapers which are still a wide form of communication used. These papers deliver written news and also other important national

events taking place. The first printing press system was introduced in 1440 by German Johannes Gutenberg. The newspaper started to get more attention and changed communication forever. With the coming of print media, the invention of Radios followed !

They were used both for communication as well as entertainment purposes, man came to know about wireless signals, which was taken as a subject of study and was tested in detail, the scientist used wireless power to share content. Radios are installed in mobile phones and cars. They were once a very important means of communication.

Now sending letters requires energy and patience to wait for a reply. Telegraphs were introduced to send text messages more quickly than written messages. It helped in sending information across the country. After that the first telephone was introduced by Alexander Graham Bell in 1876 and the mode of communication was changed entirely. Within 50 years of its invention, telephones became an essential part of every household and office. The devices transmitted human audio into signals.

These signals were then transmitted through wires. Landline telephone service began in the 1900s. People could talk on calls for hours through long distances. It was the most reliable form of the communication system. Mobile phones were introduced in 1973 and the mode of communication was changed entirely again .Television was also introduced in the era of landline telephone. The early Televisions displayed black and white pictures (ones introduced after World War II).

But with the advancement, colors were added to the screen. Today, there are several features in Televisions that provide us with more entertainment and information. But the thing with the greatest impact happened in the year 1990 with the Introduction of the world wide web by Tim Berners Lee in the year 1990. Through the internet, we can search for anything, anywhere in the whole world. Wireless connections via Wi-Fi began in 1991.

Since then, people seem to be addicted to the internet. Nowadays, every small activity of our lives, business, and education involves the use of the internet. We highly depend upon the internet for our development as a nation as well as a generation. After that smartphone came into the picture which helped people to communicate with each other with instant text messages with the added advantage of social media.

It is a fact that more or less all inventions are made keeping the welfare and progress of mankind in mind but unfortunately there is a good as well as a bad side to every invention. Because the topic of Smart phones is relevant to the current times, I would like to highlight a few negative aspects of using a smartphone(positive aspects are also there but discussion on negative aspects becomes crucial for understanding certain issues).

Research has found that using your smartphone before bed can make it harder to fall asleep. Research also has shown that when parents are on their smartphones while with their children, they are not fully present, which can lead to a host of emotional issues in kids, according to Psychology Today. "Children feel loved when they obtain attention from their parents; otherwise, they will feel emotionally neglected,". Increased smartphone use may also lead to depression. For instance, according to researchers who studied college students, the more they were on social media platforms, the more their well-being decreased, probably because they are evaluating their self worth based on the opinion of others. Studies show that reading on a smartphone is worse for learning and comprehension. In general, over usage of smartphones has caused psychological disorders in individuals to a great extent. It also has the potential to get people addicted to it. After evaluating several studies on the possibility of a connection between cell phones and glioma and a noncancerous brain tumor known as acoustic neuroma, members of the International Agency for Research on Cancer — part of the World Health Organization — agreed that there's limited evidence that cell phone radiation is a cancer-causing agent (carcinogenic). As a result, the group classified radiofrequency electromagnetic fields as possibly carcinogenic to people.

Anyways, just as people switched from landline telephones to modern day smartphones ,very soon people are going to switch to smart watches having the ability to communicate and place calls independently without any requirement of the support of a smartphone. The use of smartphones is sure to decline because it is quite uncomfortable to carry a smartphone in the pocket or in hand most of the time and also has a high risk of getting misplaced .Rather the use of a smartwatch is a much better alternative with easy portability and low risk of misplacement. Also, people can use smart landline telephones in case it becomes a burden to maintain a personal communicating device but avail facility of the modern-day applications.

Hoping that I have been able to provide some good ideas to the readers, I would like to end this article.

Barshan Roy, 4th year,
AEIE

# Sensors

A sensor is a device, module, machine, or subsystem that detects events or changes in its environment and sends the information to other electronics.

Sensors are used in everyday objects such as mobile, remote, traffic lights, automobiles etc.

The use of sensors has expanded beyond the traditional fields of temperature, pressure measurement.
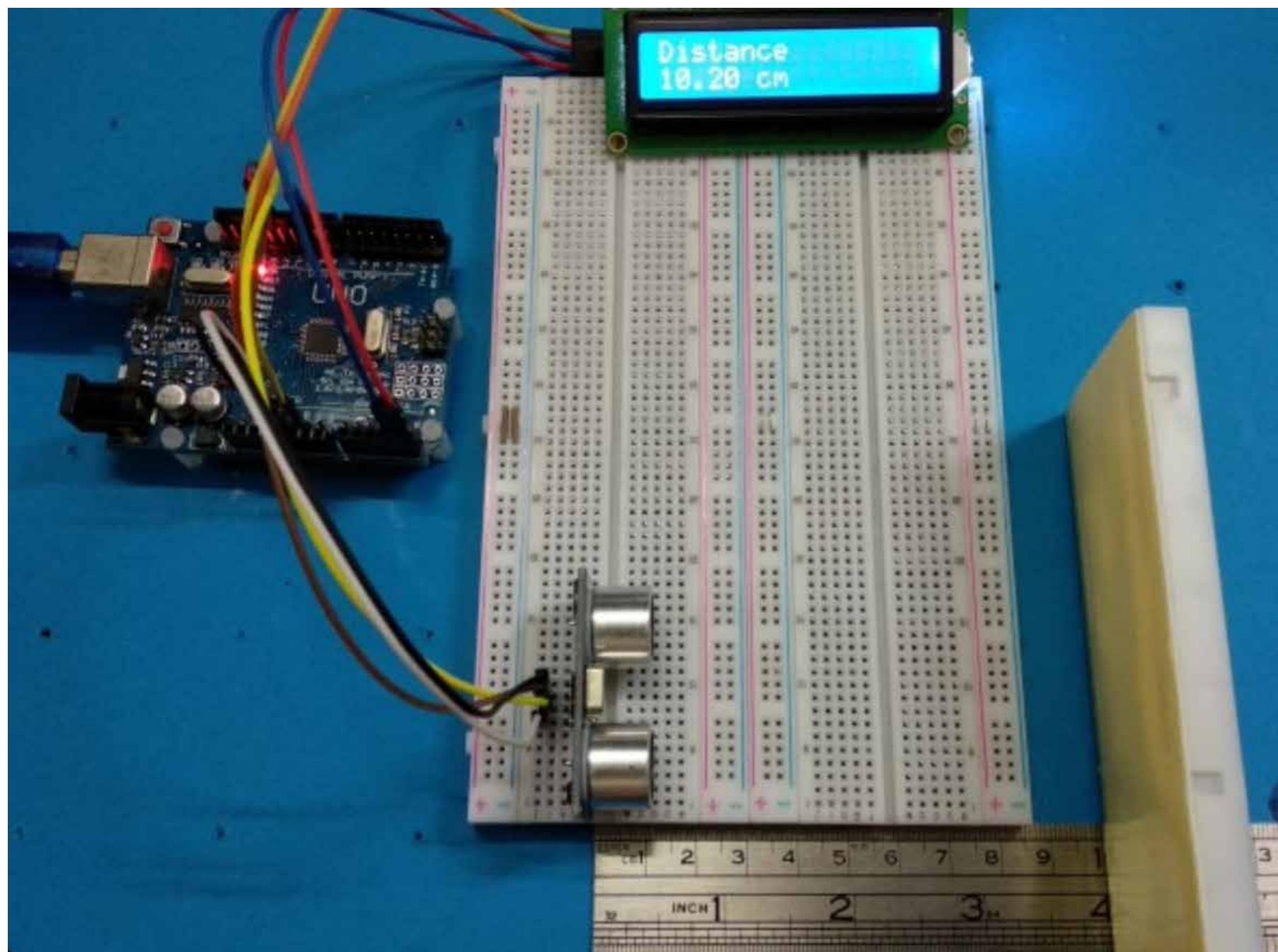
We human beings also have 5 sensors eyes, ear, nose, tongue and skin.

Experiment based on sensors are given below:
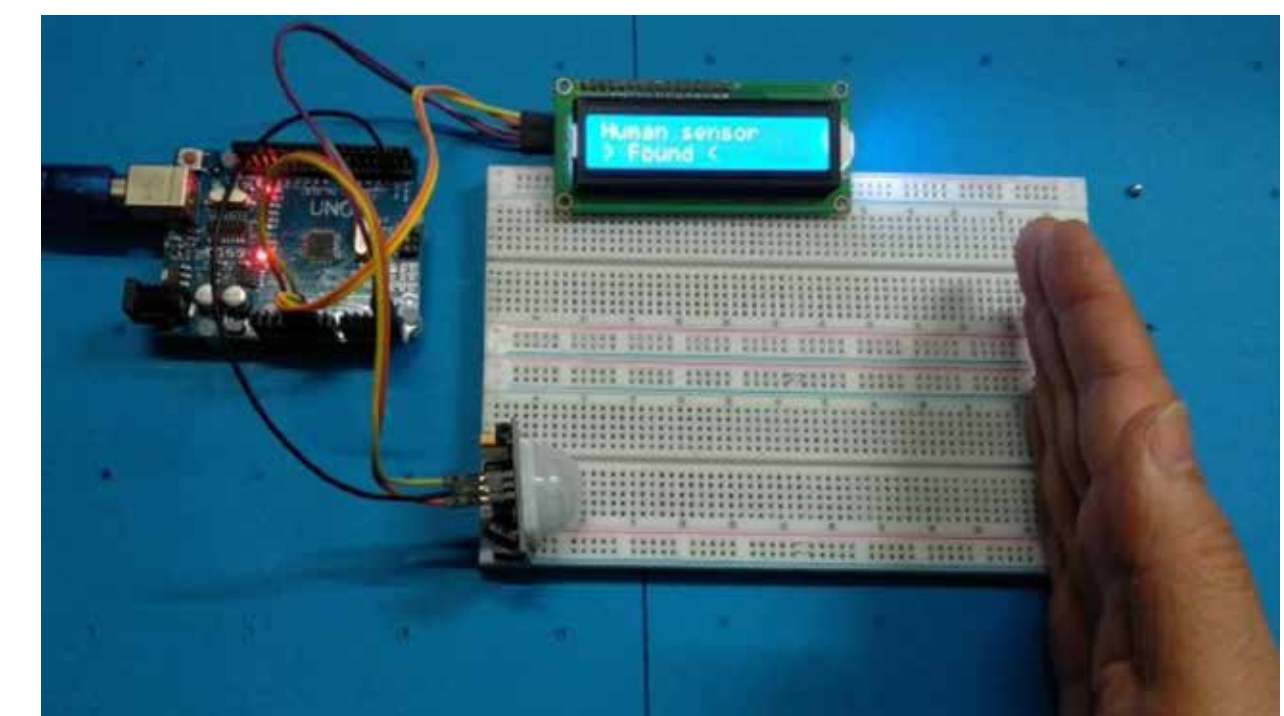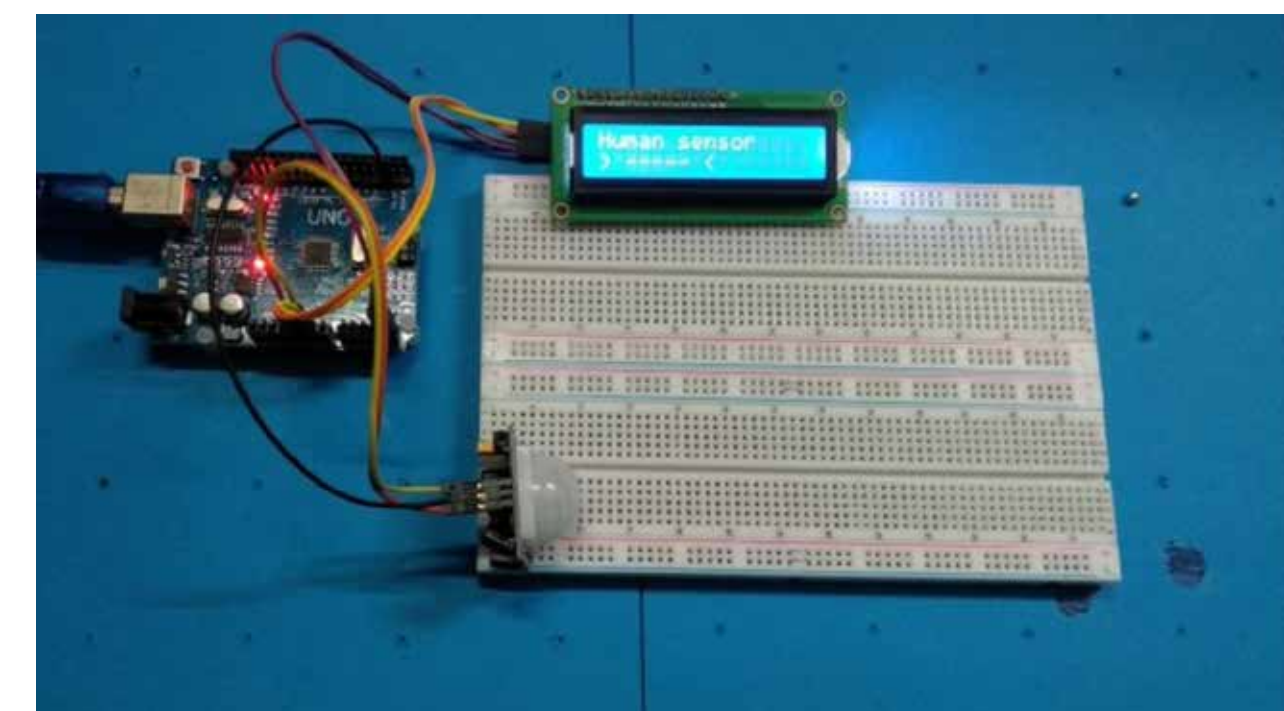




Experiment - For security purpose uses a passive infra-red sensor (PIR sensor) to detect is human/animal walk near the sensor.

Experiment - Use of an ultrasonic HC—SR04 module to measure the distance of an object.

As technology develops, the use of sensors continues to expand into every aspect of our lives. Engineers and scientists around the world use the sensors to enhance transportation systems, medical procedures, nanotechnology, mobile devices, virtual and augmented reality, and even artificial intelligence (AI).

Ankit Kumar, 2nd year,
AEIE

# PS MOTORS
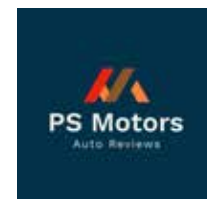


## Created by Parambrata Saha



Hi, I am Parambrata Saha, a student of Heritage Institute of Technology, AEIE 4th Year, and PS Motors is my other identity on Youtube.

PS Motors, an automotive Youtube channel which I started on Aug 22, 2020. Cars are my primary focus as content for my channel, I have reviewed many cars of prestigious car brands including, Jaguar, Land Rover, Mercedes, Tata, Hyundai etc. Along with bikes and awesome bicycle. Currently I have been subscribed by more than 2.8K members they are proud members of PSM Family & have gained more than 358K views on my channel, till date.
I have been congratulated by many brands over these years, and I will touch heights of success with your support and love.
If you also want to be a part of my PSM Family, then subscribe to it, channel like is proved below and if are feeling lazy, I am also giving a QR code for easy access to my channel.                                         Photo Gallery

Channel Link:
www.youtube.com/psmotors
QR code:

## Engineering

Ya!! We can say ignipotent may be,
Being eccentric in nature,
Having cool naturalistic intelligence,
God-gifted creativities - Power of imagination - is crazy!
Not necessarily nifty Having effervescence to fullest -
Enjoying life like a "true"
human being.
May be rambunctious but radical -
Possessing nutty ideas,
like really hypothetical imagination -
Having the potential to galvanize the whole world!!
This is called ENGINEERING!!

Shamayita Mukherjee, 1st Year
AEIE

## বোবা পাখি

সুজয় কুমার দাশ

অখন্ড প্রকৃতির নিয়মে এমন হয়েই থাকে,
মন তবু মানছে না, অনবরত খুঁজছে তাকে।
কার ডাকে চলে গেছে কোকিলকণ্ঠী,
সুরহীন জগতে একা বোবা পাখি।
অগণিত শ্রোতা চোখ বুজে বুঁদ হয়ে স্মৃতি বুকে।

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সংগীতশিল্পী লতা মঙ্গেশকর স্মরণে ..
১১-০২-২০২২

Some day, I am afraid to write,
because sometimes honesty kills me.

# Painting

Drishti Kanoi, 4th Year, AEIE



Arnab Maji, 1st Year, AEIE



Ayantika Majumder, 2nd Year, AEIE

Ayantika Majumder, 2nd Year, AEIE



Ishika Nandy, 2nd Year, AEIE



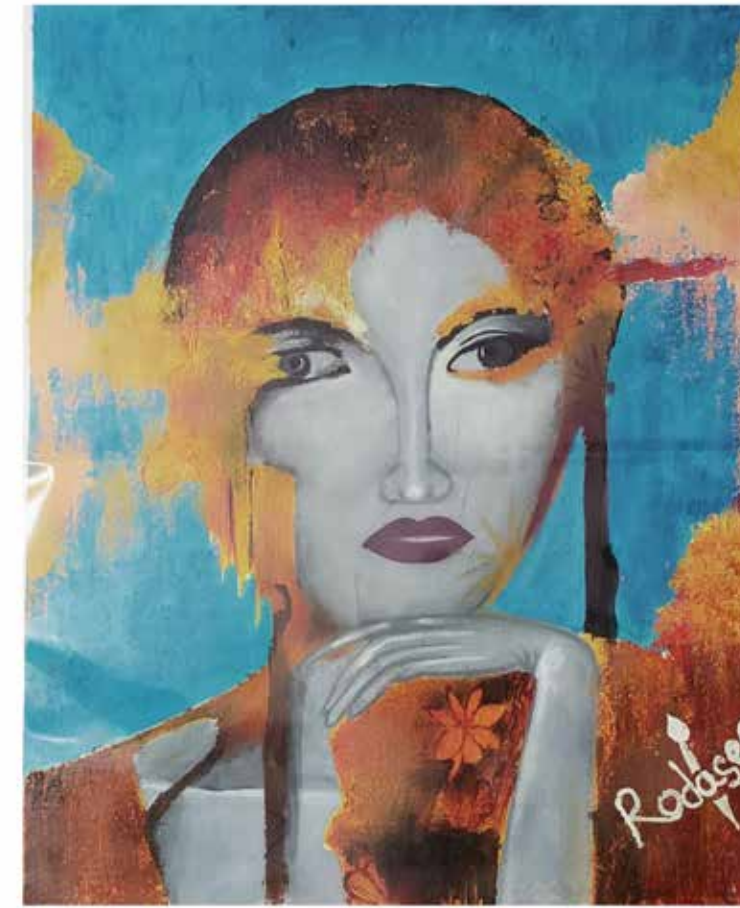Pallavi Jha, 2nd Year, AEIE
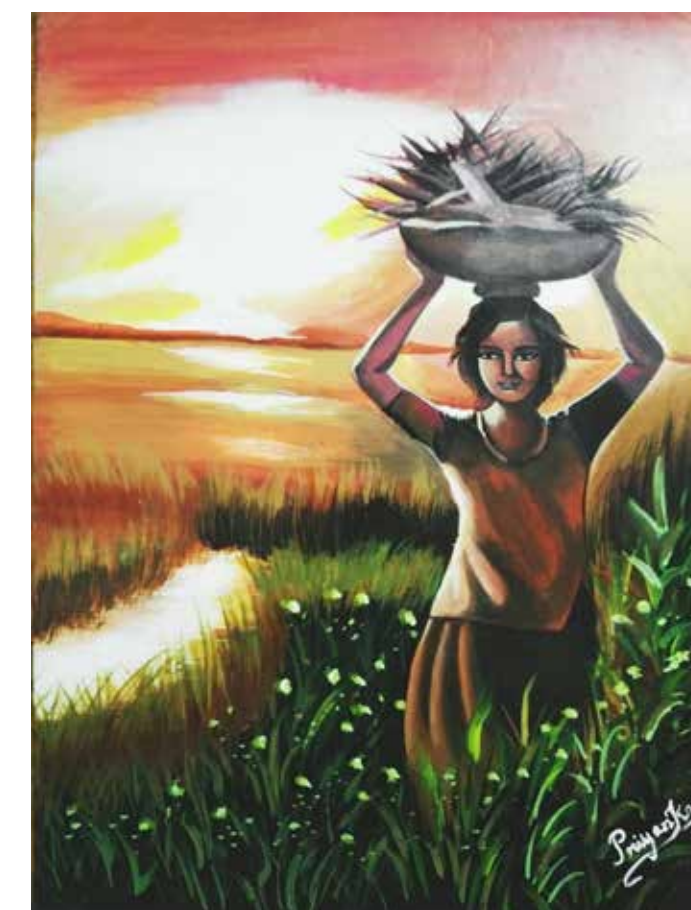


Priyanka, AEIE

Priyanka, AEIE



Rajarshi Mondal, 2nd Year, AEIE



Rodasee Mitra, 1st Year, AEIE

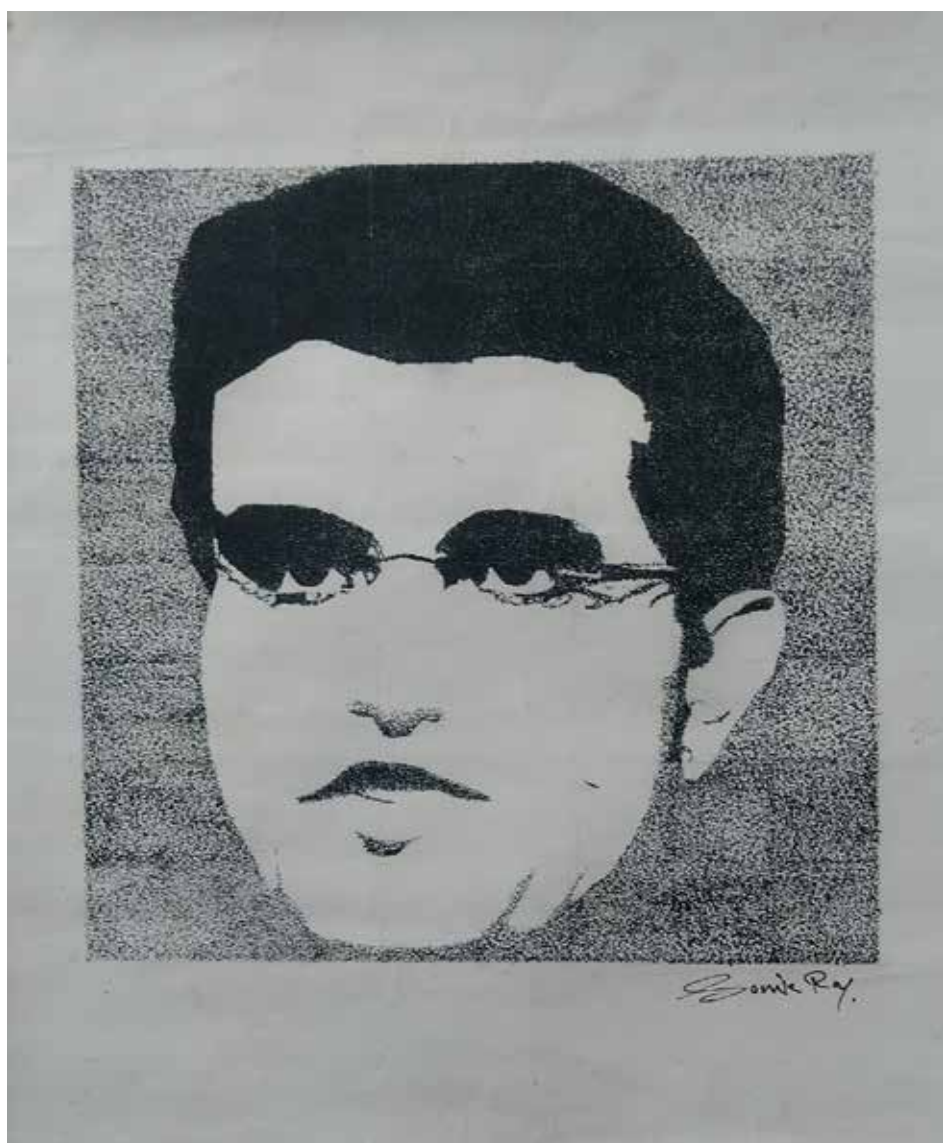Rodasee Mitra, 1st Year, AEIE



Shamayita Mukherjee, 1st Year, AEIE



Soumyajit Paul, 1st Year, AEIE
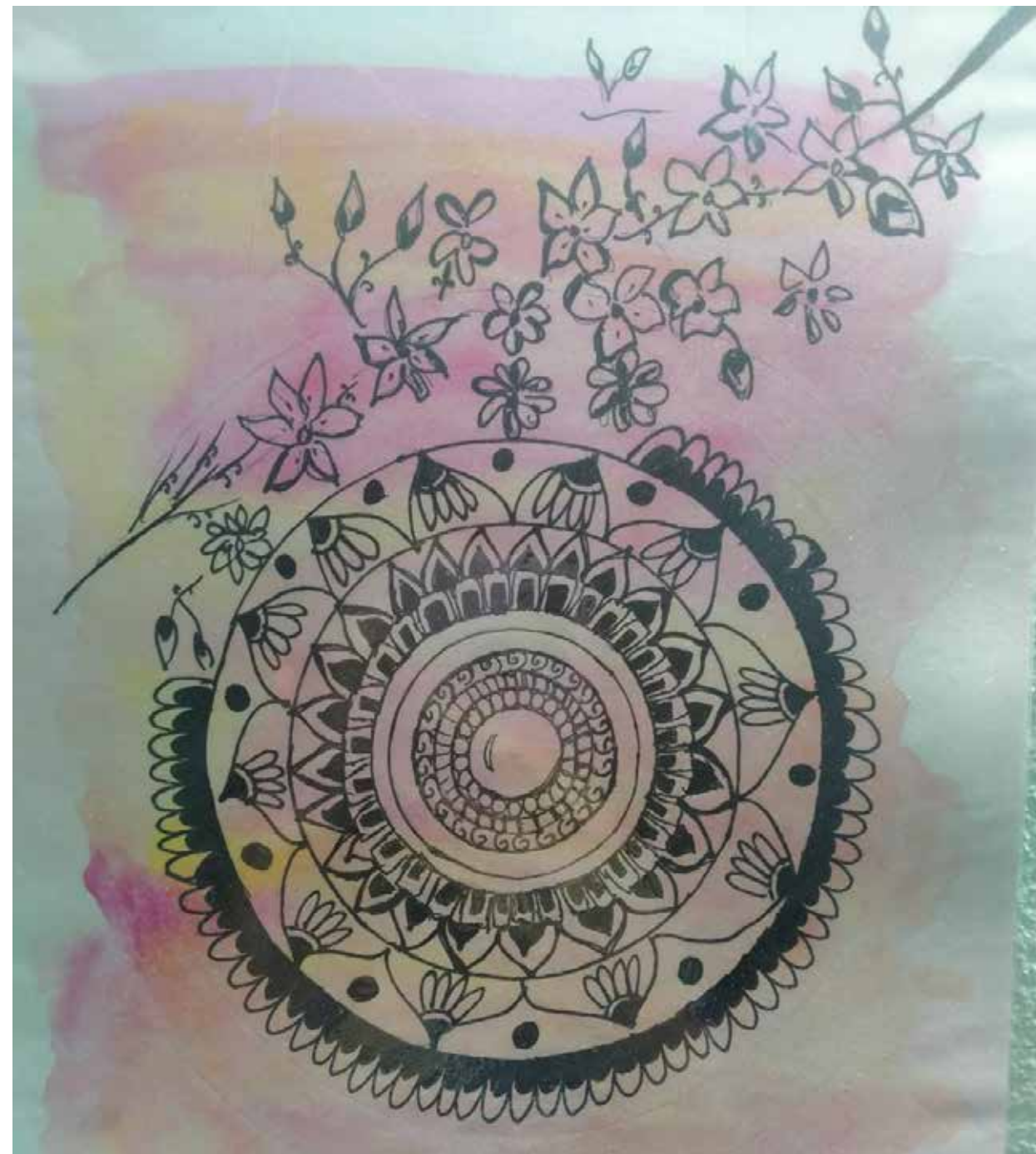


Souvik Roy, 2nd Year AEIE

Souvik Roy, 2nd Year, AEIE
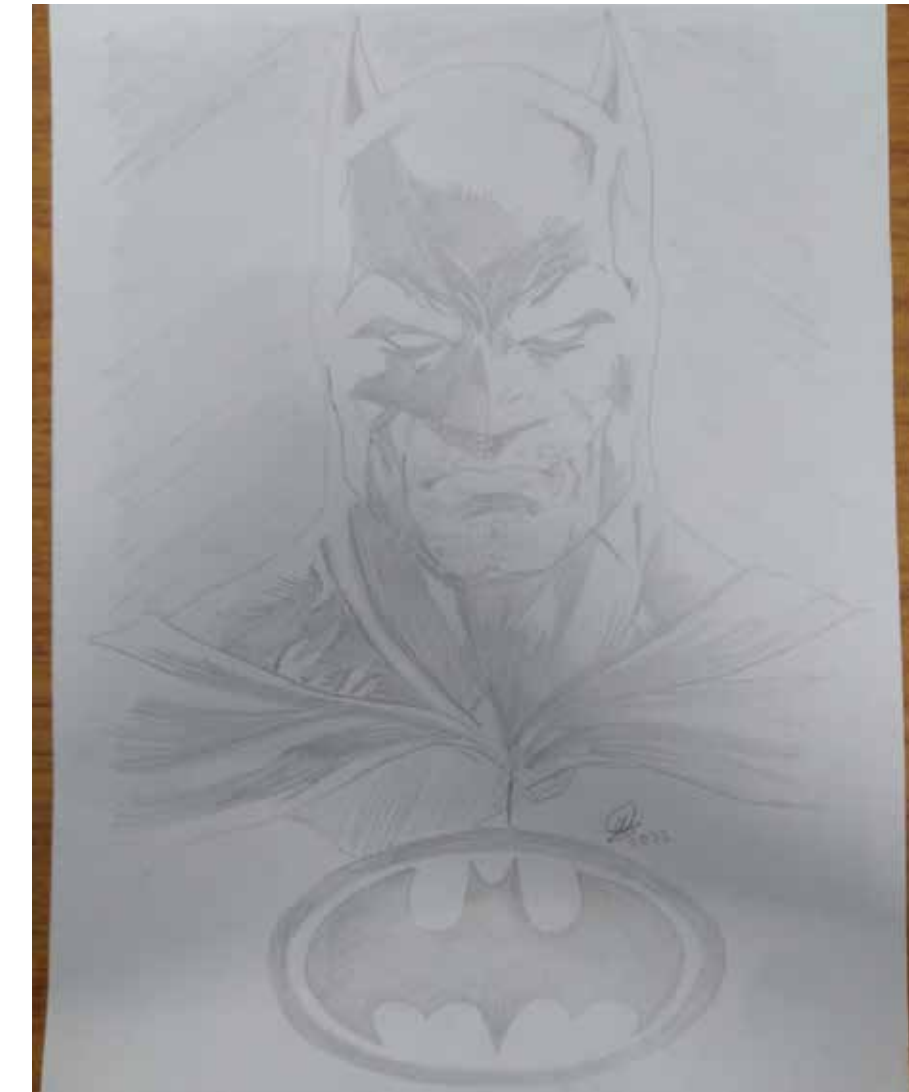


Utsav Bose, 2nd Year, AEIE
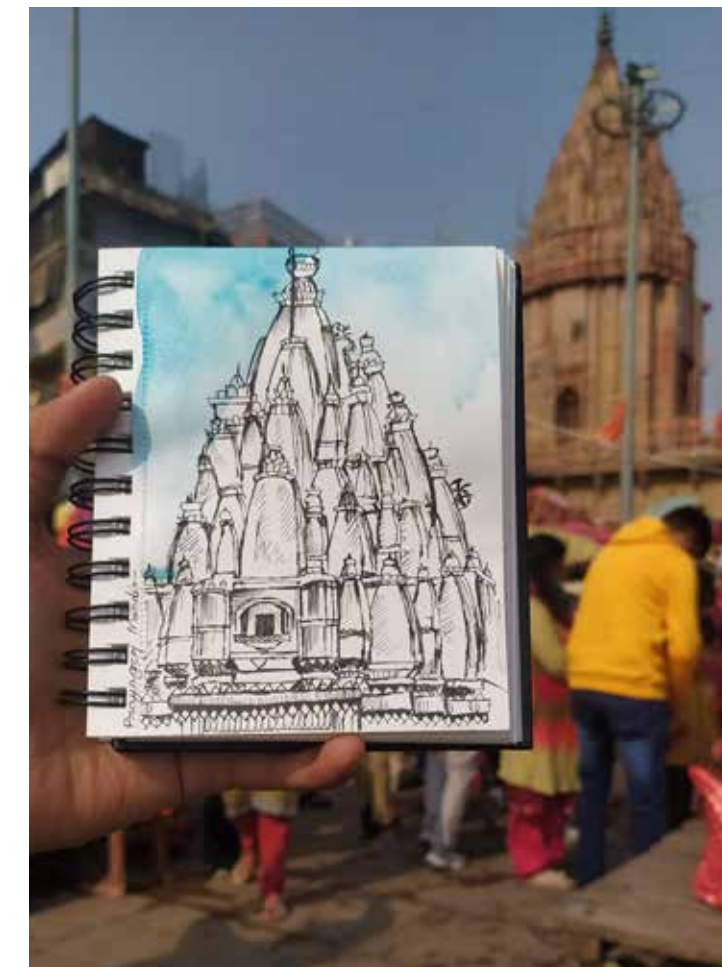


Swarnava Sil, 1st Year, AEIE

Sweety, 1st Year, AEIE



Uditanshu Singh, 4th Year, AEIE



Utsav Bose, 2nd Year, AEIE

Art is not what you see,
but you make others see.

# Photography

Puja Sharma, 4th Year, AEIE





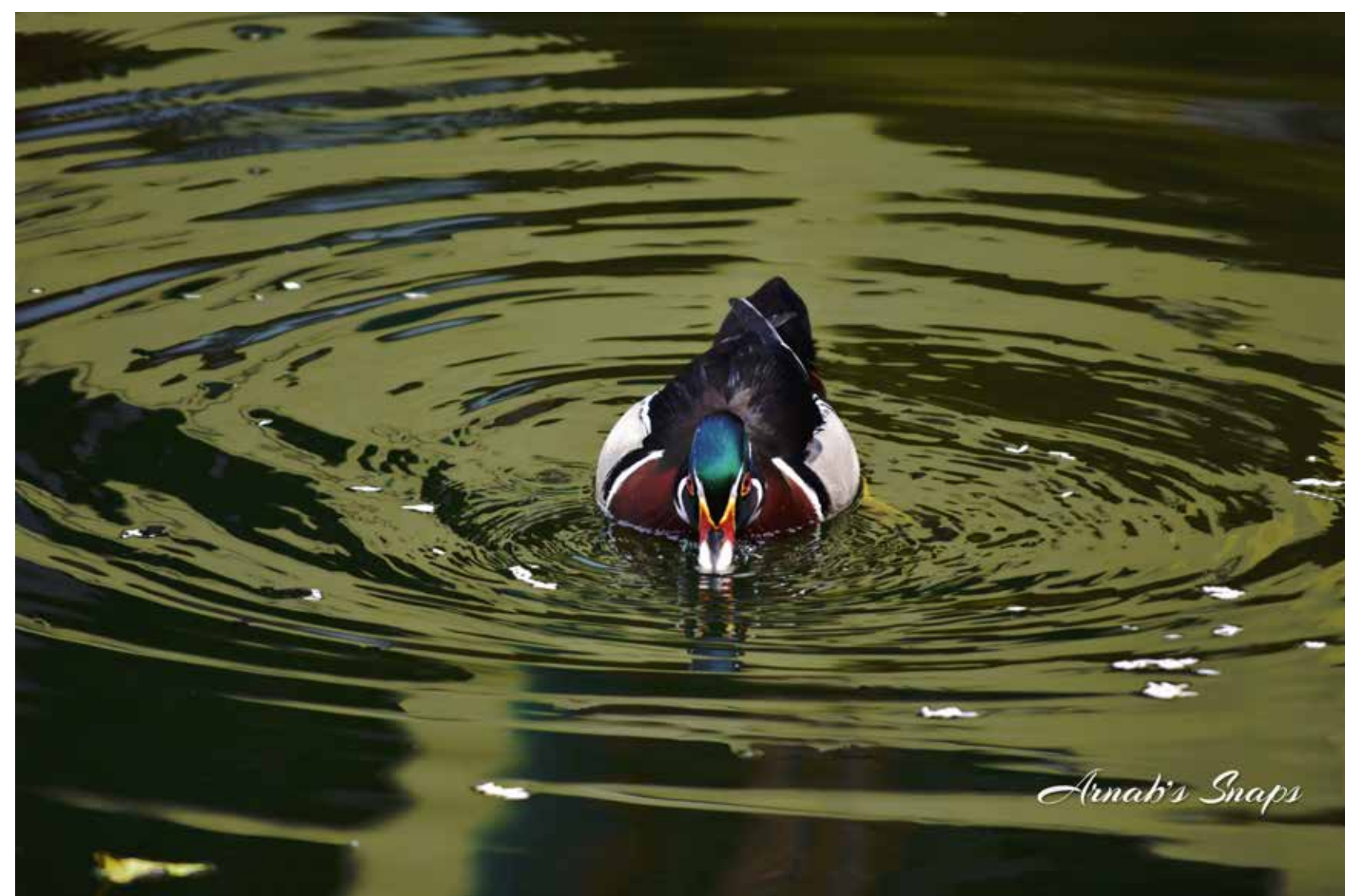Puja Sharma, 4th Year, AEIE

Sriansha Thakker, 4th Year, AEIE





Arnab Biswas, 1st Year, AEIE

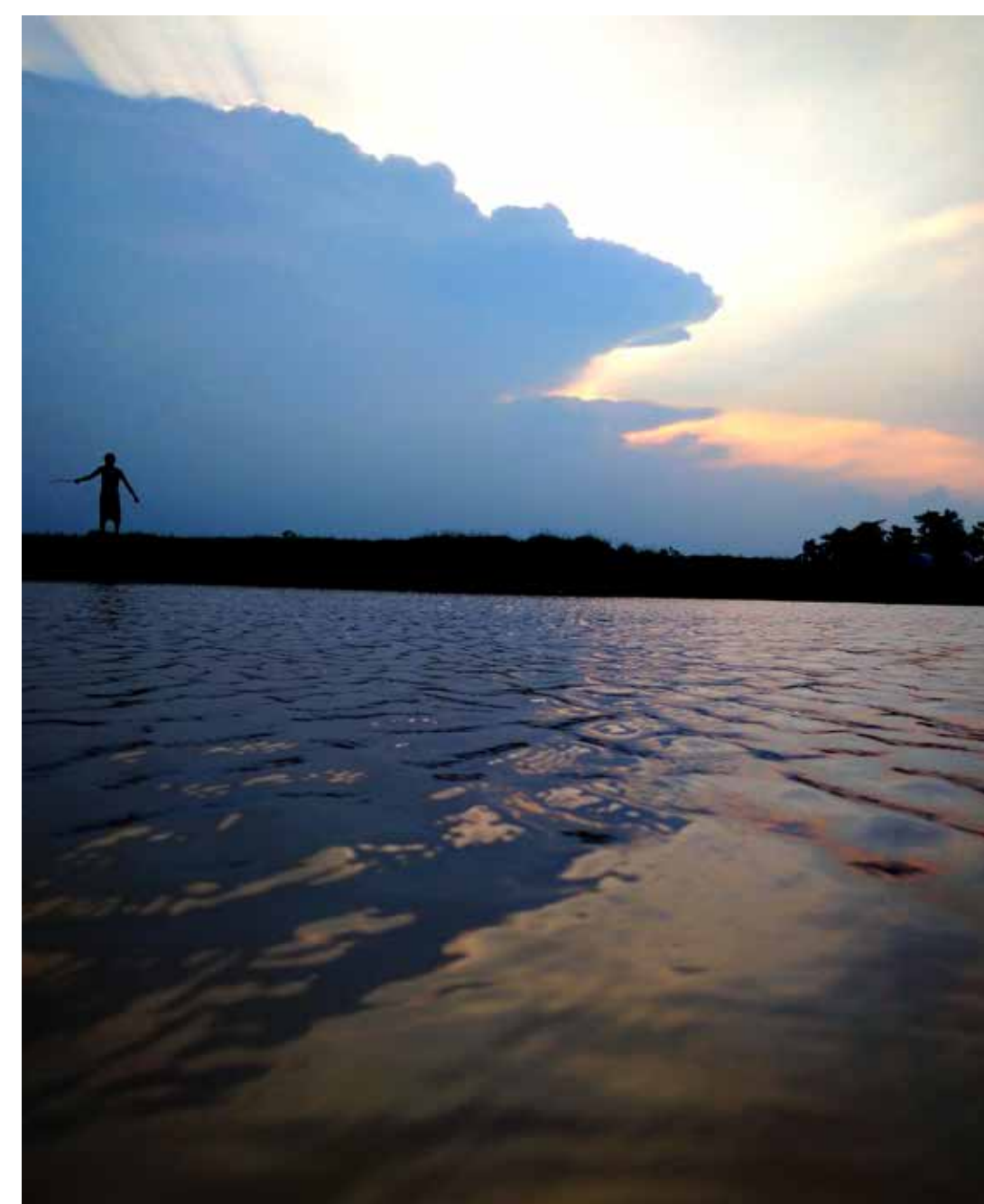Arnab Biswas, 1st Year, AEIE





Arnab Biswas, 1st Year, AEIE

Arnab Biswas, 1st Year, AEIE



Arnab Maji, 1st Year, wwAEIE



Barshan Roy, 4th Year, AEIE

Barshan Roy, 4th Year, AEIE



Pintu Jana, 3rd Year, AEIE



Shamayita Mukherjee, 1st Year, AEIE



Pintu Jana, 3rd Year, AEIE

Shreyasi Chowdhuri, 1st Year, AEIE



Sougata Masanta, 3rd Year, AEIE





Sougata Masanta, 3rd Year, AEIE

Arko Bhattacharya, 3rd Year, AEIE

Today everything exists,
to end in the photograph.

# The End