Mainapproach - Artificial Intelligence over on Earth Science

A Mohamed Wahid

Civil Engineer
21 First Floor Third Main Road, Vasanth Nagar, Bangalore, Karnataka, India

---***---

Abstract - The powerful planet on which we all live is Earth. Actually have individuals begun to sort out the complexity of this planet. In the field of natural sound observing, the common estimation is the demonstrates the typical A-weighted Sound Strain Level. This is easy to see yet gives no genuine detail on the substance of the sound scene, which can be key in its effect on those encountering it. Man-made brainpower thinking techniques have demonstrated to areas of strength for be a course of action of Earth predictable fields. Perhaps of the most quickly making in the field of electronic data advancement. In a grouping of Earth research. I'm exploring on reproduced insight enabled progresses like sharp inversion, splendid sensors, and light dealing with to the test. These movements could possibly help with lessening earth vibration by 15 august 2030

Key Words: Earth Science, Earth Vibration, Light Sensor, Earth Spine.

1. Introduction

Environmental sounds are a critical part of the human experience of a spot as they convey implications and relevant data, along with giving situational mindfulness. They have the potential to either encourage or hinder particular activities, as well as to elicit, hinder, or Chipply alter human behavior depending on the context. The experience of acoustic conditions can bring about one or the other positive or negative perceptual results, which are thus connected with prosperity and Personal satisfaction. Natural sounds are commonly viewed as in their negative viewpoint of "commotion" and treated as a side-effect of society. However, the focus of both research and practice is gradually shifting to the use of environmental sounds as mediators to promote and enhance daily life in communities. Architects investigate how normal sounds can be blended into metropolitan life.

One of our era's greatest scourges is air pollution, on account not only of its impact on climate change but also its impact on public and individual health due to increasing morbidity and mortality. There are many pollutants that are major factors in disease in humans. Among them, Particulate Matter (PM), particles of variable but very small diameter, penetrate the respiratory system via inhalation, causing respiratory and cardiovascular diseases, reproductive and central nervous system dysfunctions, and cancer. Despite the fact that ozone in the stratosphere plays a protective role against ultraviolet irradiation, it is harmful when in high concentration at ground level, also affecting the respiratory and cardiovascular system. Furthermore, nitrogen oxide, sulfur dioxide, Volatile Organic Compounds (VOCs), dioxins, and polycyclic aromatic hydrocarbons (PAHs) are all considered air pollutants that are harmful to humans. Carbon monoxide can even provoke direct poisoning when breathed in at high levels. Heavy metals such as lead, when absorbed into the human body, can lead to direct poisoning or chronic intoxication, depending on exposure. Diseases occurring from the aforementioned substances include principally respiratory problems such as Chronic Obstructive Pulmonary Disease (COPD), asthma, bronchiolitis, and also lung cancer, cardiovascular events, central nervous system dysfunctions, and cutaneous diseases. Last but not least, climate change resulting from environmental pollution affects the geographical distribution of many infectious diseases, as do natural disasters. The only way to tackle this problem is through public awareness coupled with a multidisciplinary approach by mainapproach must address the emergence of this threat and propose sustainable solutions.

2. Body of Paper

'All items have a characteristic recurrence or set of frequencies at which they vibrate. Any sound can deliver intensity and vibration'

Fig -1: **Artificial Intelligence, could produce answers for many pressing questions and problems in Earth science**

While the principal harmonization endeavors in soundscape concentrates on began over 10 years prior, soundscape hypothesis essentially may as yet be considered at a beginning phase of advancement for some viewpoints. On the off chance that agreement has been found on a few fundamental definitions and structures, there is still a ton of discussion around systemic methodologies, as well as hypothetical models supporting the soundscape idea itself, and how it connects with human brain research and physiology. Hence, commitments to this specific examination strand were especially free to propel the logical discussion on these issues.

Mainapproach suggestion is the societal impact of a scientific discipline should be assessed through the social, cultural, environmental and economic returns it is able to provide from its results.

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 12 | December - 2023 SJIF Rating: 8.176 ISSN: 2582-3930

2.1 Collecting and Documenting

Given the wide scope of soundscape, it is important to gather and maintain a repository of experimental sound data to be re-analyzed and studied from inter- and Trans- disciplinary perspectives. Also it would be useful to create a database of questionnaires, and a database of case studies. Such databases would be an invaluable resource for scientists and practitioners for years to come, supporting further developments of the discipline.

2.2 Harmonizing and Standardizing

While soundscape has been researched from different perspectives, it is important to review and harmonize the current vocabulary and methodology and consequently, to develop a new set of indicators to characterize sound quality of environments that improves significantly on the conventional decibel level approach that has been the basis of current European and international regulations. The indicators should be suitable to assess health-related quality of life and functional health which can then be used to evaluate claims related to health-promotion benefits

There is also a need to develop standard protocols, such as text and/or audio-visual documentation, which can be used to better assess cross-contextual and cross-cultural differences that may be responsible for discrepancies of study results.

The indicators and protocols could lay the foundations for standardization and lead to future European/international standards.

2.3. Creating and Designing

There is a need for practical guidance in soundscape design, based on research as well as successful practical examples. It is also of significance to provide guidelines for preserving architectural heritage sites from soundscape perspectives.

It would be important to develop tools and corresponding software for the design and implementation of soundscapes for use by urban planners and policy makers. Naturalization tools are especially relevant and important for soundscape design.

2.4. Outreaching

It is important to create awareness and promote communication concerning urban soundscapes and quiet areas amongst the policy makers and stakeholders, especially with the requirements in the Environmental Noise Directive (END). It should also be recognized that soundscape studies are not only for the improvement of the current sound environment but also for the conservation of our sound environments which can be classified as acoustic heritages.

It is equally important to create awareness amongst the general public, especially given that soundscape is relevant to a much wider range of citizens than noise.

2.5. Methodology for the Review of Soundscape Literature in Non-Academic Outlets

A concept of “alternative metrics” that could be better measures of societal impact was proposed by several researchers. This gradually led to the development of a new digital initiative called “altimetry’s” (short version for “alternative metrics”), which can be accessed online, within a subscription scheme.

In 2012. It tracks in real-time where research outputs are mentioned online and provides analysis tools to follow the “mentions” (links or written references) to those scholarly outputs; where mentions are categorized by “sources of attention” which include mainstream media and news outlets, social and academic networks, public policy documents, post-publication and peer-review fore,

Several studies have investigated the relationships between conventional bibliometric indicators, altimetry’s, and overall outreach of scientific papers to provide research stakeholders with a more comprehensive picture of the engagement with research work, particularly that which takes place in non-academic contexts. Thus, it is of interests to apply the “altimetry approach” also to soundscape studies.

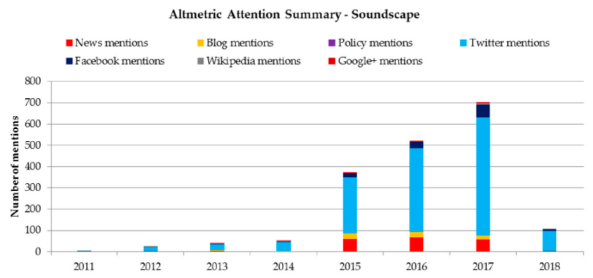

Fig -2: Number of mentions retrieved in the full Altimetry database for the selected sources of attention

2.6. Geographical Spread of the Mentions

In order to get further insights into the world regions where soundscape research gets most attention, the geographical spread of the Altimetry mentions was considered. It is worth pointing out that not all Altimetry mentions are necessarily associated to geographic information; this is either because the source of attention does not include it (e.g., Wikipedia pages), or because the information is not publicly disclosed (e.g., Twitter users might not always report their location). Consequently, only 1117 mentions were found to be associated to a specific country, with 58 countries represented around the world. Figure 3 reports the number of mentions for the countries with at least 10 mentions.

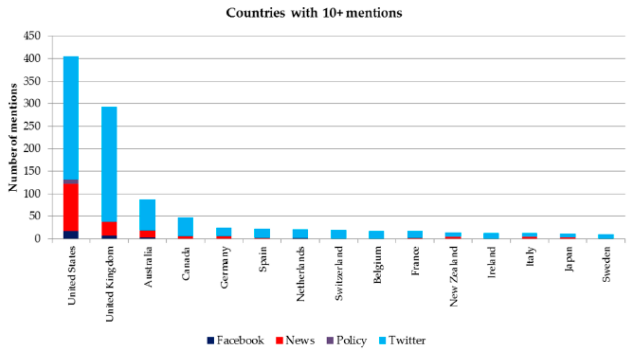

Fig -3: Number of Altmetric mentions of “soundscape” in countries with at least 10 mentions, sorted by source of attention.

2.7 Describe the field of oceanography

Oceanography is the study of everything in the ocean environment. More than 70% of the Earth’s surface is covered with water. Most of that water is found in the oceans. Recent technology has allowed us to go to the deepest parts of the ocean, yet much of the ocean remains truly un-explored. Some people call the ocean the last frontier. But it is a frontier already deeply influence by human activity. As the human population gets ever bigger, we are affecting the ocean in many ways. Populations of fish and other marine species have plummeted because of overfish-in; contaminants are polluting the waters, and global warming caused by greenhouse gases is melting the thick ice caps. As ocean waters warm, the water expands and, along with the melting ice caps, causes sea levels to rise.

Climatologists help us understand the climate and how it will change in the future in response to global warming. Oceanographers study the vastseas and help us to understand all that happens in the water world. As with geology, there are many branches of oceanography. Physical oceanography is the study of the processes in the ocean itself, like waves and ocean currents. Marine geology uses geology to study ocean earthquakes, mountains, and trenches. Chemical oceanography studies the natural elements in ocean water and pollutants.

Fig -4: When hurricanes are accurately forecast by meteorologists, many lives can be saved.

2.8 Climatology and Meteorology

Meteorologists don't study meteors — they study the atmosphere! Perhaps this branch of Earth Science is strangely named but it is very important to living creatures like humans. Meteorology includes the study of weather patterns, clouds, hurricanes, and tornadoes. Using modern technology like radars and satellites, meteorologists work to predict or forecast the weather. Because of more accurate forecasting techniques, meteorologists can help us to prepare for major storms, as well as helps know when we should go on picnics.

Climatologists and other atmospheric scientists study the whole atmosphere, which is a thin layer of gas that surrounds the Earth. Most of it is within about 10 – 11 kilometers of the Earth's surface. Earth's atmosphere is denser than Mars's thin atmosphere, where the average temperature is-63° C, and not as thick as the dense atmosphere on Venus, where car-bon dioxide in the atmosphere makes it hot and sulfuric acid rains in the upper atmosphere. The atmosphere on Earth is just dense enough to even out differences in temperature from the equator to the poles, and contains enough oxygen for animals to breathe.

Over the last several decades, climatologists studying the gases in our atmosphere have found that humans are putting higher levels of carbon dioxide into the air by burning fossil fuels. Normally, the at-Mo sphere contains small amounts of carbon dioxide, however, with in-creases in the burning of fossil fuels more than normal amounts are present. These higher concentrations of carbon dioxide can lead to higher surface temperatures. Much of climate change science is based on the increases of greenhouse gases, like carbon dioxide, in the atmosphere and the effect those higher concentrations have on global temper-matures. Climatologists can help us better understand the climate and how it may change in the future in response to different amounts of greenhouse gases and other factors.

2.9 Astronomy

Astronomers have proven that our Earth and solar system are not the only set of planets in the universe. As of June 2015, over a thousand planets outside our solar system had been discovered. Although no one can be sure how many there are, astronomers estimate that there are bill-lions of other planets. In addition, the universe contains black holes, other galaxies, asteroids, comets, and nebula. As big as Earth seems tous, the entire universe is vastly greater. Our Earth is an infiniteChipally small part of our universe.

Astronomers use resources on the Earth to study physical things beyond the Earth. They use a variety of instruments like optical telescopes and radio telescopes to see things far beyond what the human eye can see. Spacecraft travel great distances in space to send us information on far-away places, while telescopes in orbit observe astronomical bodies from the darkness of space.

Astronomers ask a wide variety of questions. Astronomers could study how an object or energy outside of Earth could affect us. An impact from an asteroid could have terrible effects for life on Earth. Strong bursts of energy from the sun, called solar flares, can knock out a power grid or disturb radio, television or cell phone communications. But astronomers ask bigger questions too. How was the universe created? Are there other planets on which we might live? Are there resources that we could use? Is there other life out there? Astronomy also relies on Earth Science, when scientists compare what we know about life on Earth to the chances of finding life beyond this planet.

Fig -5: The Hubble Space Telescope.

2.10 Other Branches of Earth Science

Geology, oceanography, and meteorology represent a large part of Earth science, while astronomy represents science beyond Earth. However, there are still many smaller branches of science that deal with the Earth or interact greatly with Earth sciences. Most branches of science are con-nested with other branches of science in some way or another. A bolo-gist who studies monkeys in rainforests must be concerned with the water cycle that brings the rain to the rainforests. She must understand the organic chemistry of the food the monkeys eat, as well as the behavior between the monkeys. She might examine the soil in which the trees of the rainforest grow. She must even understand the economy of the rain-forest to understand reasons for its destruction. This is just one example of how all branches of science are connected.

Below are examples of a few branches of science that are directly re-lasted to Earth science. Environmental scientists study the ways that Hu-man's interact with the Earth and the effects of that interaction. We hope to find better ways of sustaining the environment. Biogeography is branch of science that investigates changes in populations of organisms in relation to place over time. These scientists attempt to explain the causes of species' movement in history. Ecologists focus on ecosystems, the complex relationship of all life forms and the environment in a given place. They try to predict the chain reactions that could occur when one part of the ecosystem is disrupted.

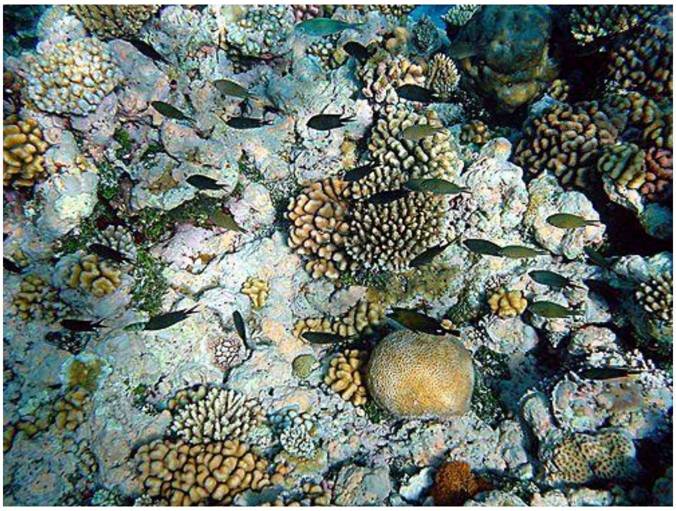

Fig -6: In a marine ecosystem, coral, fish, and other sea life depend on each other for survival.

As opposed to an oceanographer, a limnologist studies inland waters like rivers and lakes. A hydro geologist focuses on underground water found between soil and rock particles, while glaciologists study glaciers and ice.

None of these scientific endeavors would be possible without geographers who explore the features of the surface and work with cartographers, who make maps. Stratigraphy is another area of Earth science which examines layers of rock beneath the surface. This helps us to understand the geological history of the Earth. There is a branch of **science** for every interest and each is related to the others.

2.11 Evidence for ice-ocean albedo feedback in the Arctic Ocean shifting to a seasonal ice zone

Ice-albedo feedback is a key aspect of global climate change. In the polar region, a decrease of snow and ice area results in a decrease of surface albedo and the intensified solar heating further decreases the snow and ice area. In the Arctic Ocean, recent observations have revealed major reductions in summer ice extent, thinning of sea ice, and a shift from perennial to seasonal sea ice, particularly after the 2000s. It is well established that climate change signals are amplified in the Arctic and that such "polar amplification" is associated with ice albedo feedbacks.

Until recently, the Arctic Ocean has been characterized by a thick multiyear ice cover that persisted throughout the summer, with melt confined to its upper surface. In the seasonal ice zone, presence of an open water fraction with a much lower albedo results in high solar radiation absorption by the upper ocean, which in turn serves as the dominant heat source for sea ice lateral and bottom melt. Since the seasonal ice zone is dominated by thin and unreformed first-year ice, the melting of sea ice immediately increases the fraction of open water in the ice-covered area and thus drives up absorption of solar energy in the upper ocean. Hence, in regions dominated by seasonal ice such as the Southern Ocean and the Sea of Okhotsk, ice-albedo feedback due to the albedo contrast between water and ice surfaces, termed ice-ocean albedo feedback, enhances summer sea ice retreat and partly controls internal variability of the ice cover.

Recently, such feedback effects have also received attention in the context of drastic reductions in summer Arctic sea ice extent and the shift from perennial to seasonal sea ice. Satellite observations indicate a significant positive trend in solar heating of the upper ocean associated with recent changes in sea ice concentration and/or increase in ice-free area. However, key questions, such as how much of the variation in sea ice retreat and the recent sea ice reduction are explained by heat input through the open water fraction, or the specific physical processes at work in triggering and translating the feedback, remain unanswered.

Here we show the dominance of heat input through the open water fraction on sea ice loss and its variation, which is a necessary condition for ice-ocean albedo feedback, based on the relationship between sea ice retreat and heat budget over the ice-covered area. Then we explore the specific trigger of the feedback effect, and examine whether ice melt is in fact amplified significantly by this feedback, and whether the drastic reduction in summer ice extent can be explained by this feedback, based on the combined analysis of satellite observations and a Chipplified ice-ocean coupled model. We selected the Pacific Arctic Sector (fan-shaped area in Fig. 1) as the main study area. This region experienced the largest reductions in summer ice extent and volume anywhere in the Arctic Ocean beginning in the 2000s. Internal variation of ice retreat in this region explains about 86% of the variance over the entire Arctic Ocean ($n = 36$, $p < 0.001$;

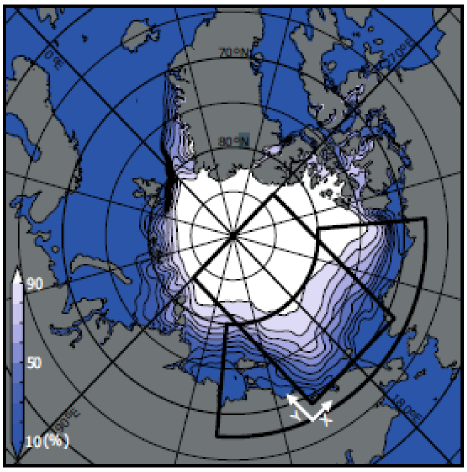

Fig –7: Map of the Arctic Ocean with September sea ice concentration averaged from 1979 to 2014.

3. Effects of Climate Change Hotter temperatures

As greenhouse gas concentrations rise, so does the global surface temperature. The last decade, 2011-2020, is the warmest on record. Since the 1980s, each decade has been warmer than the previous one. Nearly all land areas are seeing more hot days and heat waves. Higher temperatures increase heat-related illnesses and make working outdoors more difficult. Wildfires start more easily and spread more rapidly when conditions are hotter. Temperatures in the Arctic have warmed at least twice as fast as the global average.

More severe storms

Destructive storms have become more intense and more frequent in many regions. As temperatures rise, more moisture evaporates, which exacerbates extreme rainfall and flooding, causing more destructive storms. The frequency and extent of tropical storms is also affected by the warming ocean. Cyclones, hurricanes, and typhoons feed on warm waters at the ocean surface. Such storms often destroy homes and communities, causing deaths and huge economic losses.

Increased drought

Climate change is changing water availability, making it scarcer in more regions. Global warming exacerbates water shortages in already water-stressed regions and is leading to an increased risk of agricultural droughts affecting crops, and ecological droughts increasing the vulnerability of ecosystems. Droughts can also stir destructive sand and dust storms that can move billions of tons of sand across continents. Deserts are expanding, reducing land for growing food. Many people now face the threat of not having enough water on a regular basis.

A warming, rising ocean

The ocean soaks up most of the heat from global warming. The rate at which the ocean is warming strongly increased over the past two decades, across all depths of the ocean. As the ocean warms, its volume increases since water expands as it gets warmer. Melting ice sheets also cause sea levels to rise, threatening coastal and island communities. In addition, the ocean absorbs carbon dioxide, keeping it from the atmosphere. But more carbon dioxide makes the ocean more acidic, which endangers marine life and coral reefs.

Loss of species

Climate change poses risks to the survival of species on land and in the ocean. These risks increase as temperatures climb. Exacerbated by climate change, the world is losing species at a rate 1,000 times greater than at any other time in recorded human history. One million species are at risk of becoming extinct within the next few decades. Forest fires, extreme weather, and invasive pests and diseases are among many threats related to climate change. Some species will be able to relocate and survive, but others will not.

Not enough food

Changes in the climate and increases in extreme weather events are among the reasons behind a global rise in hunger and poor nutrition. Fisheries, crops, and livestock may be destroyed or become less productive. With the ocean becoming more acidic, marine resources that feed billions of people are at risk. Changes in snow and ice cover in many Arctic regions have disrupted food supplies from herding, hunting, and fishing. Heat stress can diminish water and grasslands for grazing, causing declining crop yields and affecting livestock.

More health risks

Climate change is the single biggest health threat facing humanity. Climate impacts are already harming health, through air pollution, disease, extreme weather events, and forced displacement, pressures on mental health, and increased hunger and poor nutrition in places where people cannot grow or find sufficient food. Every year, environmental factors take the lives of around 13 million people. Changing weather patterns are expanding diseases, and extreme weather events increase deaths and make it difficult for health care systems to keep up.

Poverty and displacement

Climate change increases the factors that put and keep people in poverty. Floods may sweep away urban slums, destroying homes and livelihoods. Heat can make it difficult to work in outdoor jobs. Water scarcity may affect crops. Over the past decade (2010–2019), weather-related events displaced an estimated 23.1 million people on average each year, leaving many more vulnerable to poverty. Most refugees come from countries that are most vulnerable and least ready to adapt to the impacts of climate change.

4. Humans are responsible for global warming

Climate scientists have showed that humans are responsible for virtually all global heating over the last 200 years. Human activities like the ones mentioned above are causing greenhouse gases that are warming the world faster than at any time in at least the last two thousand years.

The average temperature of the Earth’s surface is now about 1.1°C warmer than it was in the late 1800s (before the industrial revolution) and warmer than at any time in the last 100,000 years. The last decade (2011-2020) was the warmest on record, and each of the last four decades has been warmer than any previous decade since 1850.

Many people think climate change mainly means warmer temperatures. But temperature rise is only the beginning of the story. Because the Earth is a system, where everything is connected, changes in one area can influence changes in all others.

The consequences of climate change now include, among others, intense droughts, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity.

5. mainapproach will reduce to 30Hz by 15 August 2030

'All objects have a natural frequency or set of frequencies at which they vibrate. Any sound can produce heat and vibration'

Fig -8: mainapproach with AI will reduce to 30.0Hz

5.1. Horn theory

The horn system includes the following terminology:

Impedance: Quantity impeding or reducing flow of energy. Can be electrical, mechanical, or acoustical.

Acoustical Impedance: The ratio of sound pressure to volume velocity of air. In a horn, the acoustical impedance will increase when the cross-section of the
Horn decreases, as a decrease in cross section will limit the flow of air at a certain pressure.

Volume Velocity: Flow of air through a surface in m3/s, equals particle velocity times area.

Throat: The small end of the horn, where the driver is attached. Mouth: The far end of the horn, which
Radiates into the air.

Driver: Loudspeaker unit used for driving
The horn.

C: The speed of sound, 344m/s at 20° C.

Using a distance parameter between a person and other objects, this device can monitor and control the sound of the vehicle horn. We can send these data to a faraway location around the world to create a sound graph report.

5.2 Volume and speed correction:

The hourly flow of each vehicle category (Veh/hr) and the average speed of each category (km/hr) are used for calculation of Leq value. Therefore this model incorporated the volume speed correction that is applied for final Leq value.

Avs = 10 Log (DO V/S) -25

Where,

V = Volume for the category (Veh/hr.)

S = Speed (km/hr.)
DO = Reference distance (m/s)

ρ_0: Density of air, 1.205 kg/m^3.
f: Frequency, Hz.
ω: Angular frequency, radians/s, $\omega = 2\pi f$.
k: Wave number or spatial frequency,

radians/m, $k = \frac{\omega}{c} = \frac{2\pi f}{c}$.

S: Area.
p: Pressure.
Z_A: Acoustical impedance.
j: Imaginary operator, $j = \sqrt{-1}$.

5.3. Reduce, reuse, and recycle.

In the United States, the average person generates 4.5 pounds of trash every day. Fortunately, not all the items we discard end up in landfills; we recycle or compost more than one-third of our trash. In 2014 this saved carbon emissions equivalent to the yearly output of 38 million passenger cars. But we could be doing so much more. “Reduce should always be the number-one priority,” says NRDC senior resource specialist Darby Hoover. And to reap the environmental benefits of “recyclable” goods, you must recycle according to the rules of your municipality, since systems vary widely by location. Search your municipality’s sanitation department (or equivalent) webpage to learn exactly what you can place in the recycling bin, as counties and cities often differ in what they accept.

5.4. Speak Up

Speak up and get others to join in taking action. It's one of the quickest and most effective ways to make a difference. Talk to your neighbors, colleagues, friends, and family. Let business owners know you support bold changes – from plastics-free products and packaging to zero-emissions vehicles. Appeal to local and world leaders to act now. Climate action is a task for all of us. And it concerns all of us. No one can do it all alone – but we can do it together.

5.5. Artificial Intelligence in Human Cells

Here I am using artificial intelligence to augment how cells are studied and could help scientists better understand and eventually treat disease.
Images of organ or tissue samples contain millions of cells. And while analyzing these cells in situ is an important part of biological research, such images make it nearly impossible to identify individual cells, determine their function and understand their organization. A technique called spatial transcriptomics brings these cells into focus by combining imaging with the ability to quantify the level of genes in each cell — giving researchers the ability to study in detail several

key biological mechanisms, ranging from how immune cells fight cancer to the cellular impact of drugs and aging.

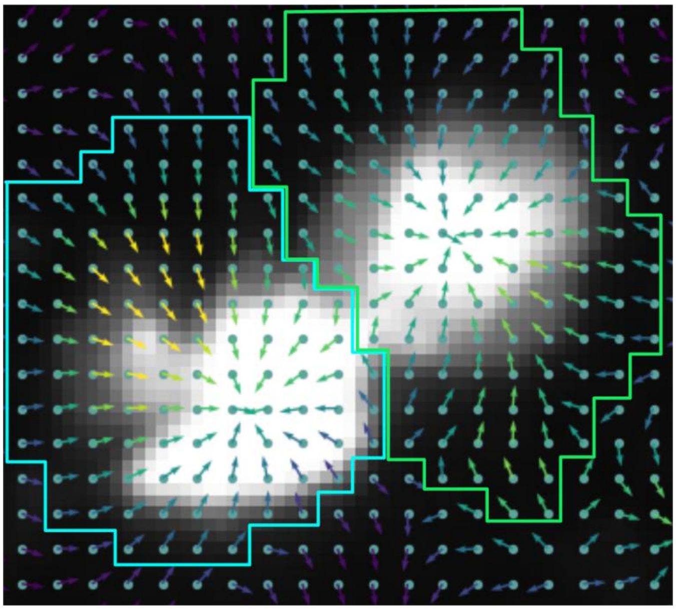

Fig -9: Human Cells Segmenting two cells using spot information.

Many current spatial transcriptomics platforms still lack the resolution required for closer, more detailed analysis. These technologies often group cells in clusters that range from several to 50 cells for each measurement; a resolution that may be sufficient for well-represented large cells but that is problematic for small cells or ones that aren't well represented. These rare cells may be the most critical for the disease or condition being studied.

The CMU research focuses on more recent technologies that produce images at a much closer scale, allowing for subcellular resolution (or multiple measurements per cell). While these techniques solve the resolution issue, they present new challenges because the resulting images are so close-up that rather than capturing 15 to 50 cells per image, they capture only a few genes. This reversal of the previous problem creates difficulties in identifying the individual components and determining how to group these measurements to learn about specific cells. It also obscures the big picture.

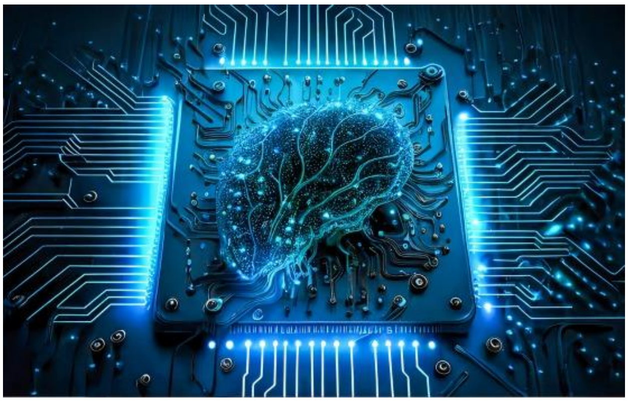

Fig -10: Human Cells Segmenting two cells using spot information.

The algorithm research, called subcellular spatial transcriptomics cell segmentation (SCS), harnesses AI and advanced deep neural networks to adaptively identify cells and their constituent parts. SCS uses transformer models, Chipilar to those used by large language models like ChatGPT, to gather information from the area surrounding each measurement. Just as ChatGPT uses the entire context of a sentence or paragraph for word completion, the SCS method fills in missing information for a specific measurement by incorporating

When applied to images of brain and liver samples with hundreds of thousands of cells, SCS accurately identified the exact location and type of each cell. SCS also identified several cells missed by current analysis approaches, such as rare and small cells that may play a crucial role in specific diseases or processes, including aging. SCS also provided information on location of molecules within cells, greatly improving the resolution at which researchers can study cellular organization.

“The ability to use the most recent advances in AI to aid the study of the human body opens the door to several downstream applications of spatial transcriptomics to improve human health,” said Ziv Bar-Joseph, the FORE Systems Professor of Machine Learning and Computational Biology at CMU. Such downstream applications are already being investigated by several large consortiums, including the Human BioMolecular Atlas Program (HuBMAP), that are using spatial transcriptomics to create a detailed, 3D map of the human body.

“By integrating state-of the-art biotechnology and AI, SCS helps unlock several open questions about cellular organization that are key to our ability to understand, and ultimately treat, disease,” added Hao Chen, a Postdoctoral Fellow in CBD.

SCS is available free on GitHub and was supported by grants from the National Institutes of Health and the National Science Foundation. The paper, SCS: Cell Segmentation for High-Resolution Spatial Transcriptomics, is available on Nature Methods

5.6. The Intelligent Workflow of Spinal Imaging

Radiologists are under ever-increasing pressure to boost productivity, as they are asked to interpret greater daily quantities of more difficult cases than in the past. If the Picture Archiving & Communication System (PACS) automatically shows each series in the correct chosen position, orientation, and magnification, as well as the correct preferred window and level, syncing, and cross-referencing settings, radiologists can work more efficiently. Such hanging protocols should be uniform and based precisely on modality, body part, laterality, and time (in the case of prior available imaging). By employing smarter technologies that process a range of data, AI has the potential to transform the way PACS displays information to a radiologist. One PACS provider employs ML algorithms to discover how radiologists prefer to watch examinations, collect contextual data, present layouts for future Chipilar studies, and modify the following corrections [48]. These intelligent solutions can assist radiologists in achieving improved productivity by resolving challenges associated with fluctuating or missing data that might cause traditional hanging methods to fail.

Fig -11: Artificial Intelligence will control Human in future

In recent years, the rapid development of AI technology has gradually enabled an intelligent spinal imaging scanning workflow. This intelligent scanning workflow covers functions such as patient identity intelligent authentication, intelligent voice interaction, intelligent patient positioning, and intelligent scanning parameter setting throughout the entire image scanning process, and its purpose is to significantly reduce the repetitive work of scanning physicians and improve the circulation of patients in the hospital, which improves the medical experience of patients and, at the same time, increases the consistency of the image data collected by different physicians.

At present, there is little research work in the field of intelligent workflow in academia. Existing work mainly focuses on intelligent scanning and positioning. Among them, the fast and accurate automatic positioning of human anatomy is the core of its function. Kelm et al. proposed an automatic positioning method for human anatomical structures called marginal space learning (MSL), which modeled the anatomical structure positioning as a search process for specific anatomical structures in medical images. The search space (including dimensions such as position, size, and angle) is considerable, making the time consumption of exhaustive search methods unacceptable. The principle of MSL is to prune the impossible situations in advance during the search process, thereby avoiding a large number of useless searches. The effective search space is only a small part of the complete search space, so it is called edge space learning. MSL has a wide range of applications and can realize the rapid positioning of different human anatomical structures. This reference introduces the experiment of using MSL to automatically locate the spine in MR images. The results show that the CPU version of the MSL algorithm can detect all lumbar intervertebral discs within an average of 11.5 s, with a sensitivity of 98.64% and a false positive rate of only 0.0731, which has high clinical application value.

In addition to the automatic positioning of tissues and organs, the automatic positioning of key points (landmarks) is also important in the intelligent scanning workflow. Most of the existing methods first learn a feature model of structure and texture and then search for the key points of interest in the image based on this model. Usually, these feature models are calculated based on the local information of the image, which makes it easy to fall into the local extremism. In order to solve the above-mentioned problems, Ghesu et al. proposed a novel key point location method, which treats the key point feature modeling process and search process as a unified process. Specifically, this method uses DL methods to achieve multi-level image feature extraction and uses reinforcement learning (RL) methods to achieve efficient spatial search, and the deep neural network is used to combine the two together to perform the end-to-end learning process and effectively improve the overall detection effect of the algorithm. This reference has conducted algorithm tests on two-dimensional MR images, two-dimensional ultrasound images, and three-dimensional CT images. The experimental results show that the algorithm is far superior to the existing key point detection algorithms in accuracy and speed, with an average error of 1~2 pixels. When the key point does not exist, the algorithm can automatically give corresponding prompts, which has a wide range of applications and good practical value. Aiming at 3D CT and MR images, Zhang et al. proposed a fine-grained automatic recognition method of human body regions. Compared with the computer vision field, the labeled data in the medical imaging field is relatively small. Transfer learning can usually be used in order to solve the problem of network training over-fitting. However, there is a substantial difference between natural images and medical images, so transfer learning based on natural images cannot achieve optimal results in many cases. The innovation of the method proposed in this reference is that a self-supervised network transfer learning method is designed, such that CT or MR images themselves can be used for self-learning, thereby avoiding images in different fields of problems caused by large differences. The experimental results in their study show that, compared to the cross-domain transfer learning from natural images to medical images, the label-free self-supervised transfer learning in the domain proposed in this reference can obtain significantly better recognition results.

In the industry, work related to an intelligent scanning workflow has been reported. Germany's Siemens AG has developed a fully assisting scanner technology (FAST) system, which uses high-precision 3D cameras to achieve accurate patient positioning. In particular, the 3D camera can obtain a three-dimensional contour of the patient's body using infrared light technology, calculating the patient's body shape and other useful information based on this information, and performing other functions such as automatic is center positioning and automatic scanning range as a result. The consistency of picture scanning is improved, and unwanted radiation exposure is lowered. Generally speaking, the research and development in the field of medical imaging intelligent scanning workflow is still in its infancy, and breakthroughs and innovations have been sporadic. The entire imaging scanning chain has not yet been fully opened, and many innovative researches with clinical value need to be continued in the future, so as to improve the patient's diagnosis and treatment effect and medical experience and reduce the heavy and repetitive workload of the scanning physician.

Fig -12: Human Spinal Cord will support to down earth vibration

5.7. Spinal Card will save our Earth in Future

Understanding of the structure and function of the spinal cord Has historically been more reliably founded than theories on The function and physiology of other parts of the body. Oftentimes, vague hypotheses proposed as facts for various physiological and anatomical structures were accepted without any verifiable experimental results. Given the morphological consistency displayed by the spinal cord and the obvious clinical symptoms and syndromes produced from injury to it, the function and actions of the spinal cord were not the subject of conjecture and scientific uncertainty. Contemporary research on the spinal cord has instead focused on microanatomy
and manipulation of the spinal cord to treat spinal cord Injury. The present review aims to provide an overview of Our understanding of spinal cord function through history, and how this historical understanding may be used to construct a Framework to guide further research into spinal cord function.

Fig -13: Human Spinal Cord will support to down earth vibration

As mentioned above, the structural consistency and relative ease of access and manipulation of the spinal cord has allowed for our understanding of its function to have been well established even by early physicians. Writings from Hippocrates have also provided information on the clinical consequences of injury to the spinal cord. The eleventh Century physician Ibn Jazlah posited that diseases of the spinal Cord appeared to result in paralysis and numbness. He further noted that lesions of the beginning of the spinal cord appeared to cause injury to the limbs of the body but did not involve the Face. He also noted that other associated symptoms included Tremor and limited movements. These are just few instances of early physician scientists noting the correlation between Spinal anatomy and the stereotypic symptoms produced from injury to the spine. These correlations were somewhat verified by experimental investigation of the spine via irritation of various components of the cord and then correlating manipulation to specific symptoms and lesions. This approach was pioneered by Galen and stayed at the same stage of development until the end of the eighteenth century. Galen, and other historical scientists, established a functional relationship between the brain and spinal cord. Galen believed the spinal cord to be a conductor of sensorimotor signals that conveys messages to and from the brain, and compared it to a stream that gushes out of the brain and sends nerves to all parts of the body. Other historical scientists also commented on the relationship between the brain and the spinal cord. The third century BC Greek Praxagoras hypothesized that the brain was only a continuation of the spinal cord, and Aristotle believed that the spinal cord is rich in blood and of a hot nature.Willis proposed that the spinal cord exists as the main route for Blife spirits formed within the brain.

Pathology of the spinal cord has also been described in historical medical texts, dating back to Hippocrates (Fig. 1 and cover figure) and his immediate disciplines. These Hippocratic physicians associate injury of the spinal cord with Symptoms such as paralyses, spasms, and disruptions of urinary bladder emptying. The ancient Greek Celsus (second century described a syndrome of paralysis of the arms, convulsions, pain, vomiting, and difficulty breathing

Fig -14: Human Spinal Cord function with Artificial Intelligence

Gained in the early stages of this approach. Significant findings of fifteenth to seventeenth century anatomists instead focused on anatomy of the brain and vagus nerve. In 1667, the Dane Steno ligated the descending aorta and produced paralysis of the lower extremities and rightfully attributed this to ischemia of the spinal cord. Early anatomists and physicians likely did not differentiate between injury to the medulla oblongata and the spinal cord, and felt that injury to the spinal cord could lead to rapid death. Researchers such as Perrault declared the spinal cord to be the most vital component of the central nervous system. The technique of

Stimulating and irritating specific segments of the spinal cord soon became common, with electrical stimulation being introduced in the mid-eighteenth century by van den Bosch. Stimulation of the spine often yielded local convulsions and movements, but this approach did not initially establish any concrete functional relationships.

The methods and techniques used for exploration of the spinal Cord progressively became more invasive but this did not necessarily yield novel discoveries into functions of the spinal column. This may have been in part due to lack of knowledge on the histological details of the structure and segmentation of the spinal column. Without this knowledge, the cord was experimented upon as a singular, consistent structure. As we now know, the spinal cord has a highly segregated anatomy and lack of insight into the spine's detailed anatomy prevented researchers from describing its specific functions. Through clinical correlations between both symptoms and lesions of The spine, along with early manipulative investigations,

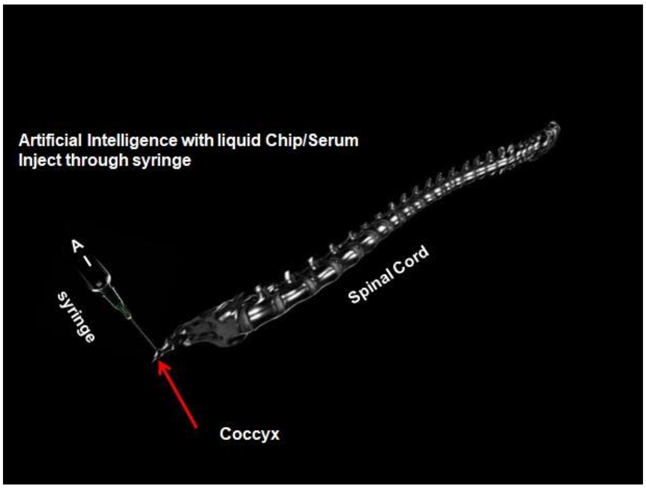

Fig -15: Human Spinal Cord connecting with Artificial Intelligence liquid Chip/serum

Historical researchers were able to identify the spinal cord as an important conduit for signals to and from the brain. Contemporary researchers have used investigative techniques that have gone beyond surgical manipulation and Stimulation to visualize the various components of the central Nervous system; however, a great amount of effort and research is still needed to map and decipher the intricacies of The human spinal cord. Compliance with ethical standards Conflict of interest The authors have no conflicts of interest.

Additionally, it serves as the insertion site for the muscles of the pelvic floor and those that contribute to voluntary bowel control and supports the position of the anus.

Conclusion

There is no doubt that the mainapproach focus on Earth Science can be arrived at till last human on the planet...

A. Intelligent Auto Horn System Using Artificial Intelligence

- Using a distance parameter between a person and other objects, this device can monitor and control the sound of the vehicle horn.
- We can send these data to a faraway location around the world to create a sound graph report.

B. World Health Organisation Report

- In the United States, the average person generates 4.5 pounds of trash every day. Fortunately, not all the items we discard end up in landfills; we recycle or compost more than one-third of our trash.
- In 2014 this saved carbon emissions equivalent to the yearly output of 38 million passenger cars. But we could be doing so much more. "Reduce should always be the number-one priority," says NRDC senior resource specialist Darby Hoover. And to reap the environmental benefits of "recyclable" goods, you must recycle according to the rules of your municipality, since systems vary widely by location.
- Search your municipality's sanitation department (or equivalent) webpage to learn exactly what you can place in the recycling bin, as counties and cities often differ in what they accept.

C. Mainapproach

- Despite its small size, the coccyx has several important functions. Along with being the insertion site for multiple muscles, ligaments, and tendons.
- Coccyx defers from one to other and it will be major ID for entire world.
- Inject Liquid Chip or serum in to coccyx with AI.
- This is a solitary ID for each individual and not to be change whole his/her life till they die.
- It is compulsory for every individual.
- Central system standard followed for this project.
- Coccyx constrained by Chipulated intelligence framework and screen by incorporate activity from space.
- Concentrate activity having control of each and every one, through the world.

- mainapproach will screen each one from space where that person violating earth science and environment process and doing irrelevant activities, straight report send to which country he/she belongs to.

- If the Earth Vibration goes down slowly, between 2024 and 2030, this will have a good future and be a complete success.

- Major Department and Organisation involved in this project
  - Medical Science
  - Bio Technology
  - Artificial Intelligence
  - Earth Science
  - Environment Department
  - World Health Organisation
  - Human Phycology
  - Astronomy
  - NASA
  - ISRO
  - Artificial Intelligence

Communications with Human, Space and Earth

Deep Space Network (DSN) is an international network of antennas that provide the communication links between the scientists and engineers on Earth to the missions in space and on Earth.

The DSN consists of three deep-space communications facilities placed approximately 120 degrees apart around the world: at Goldstone, in California's Mojave Desert; near Madrid, Spain; Thar Desert, Rajasthan, India; and near Canberra, Australia. This strategic placement permits constant observation of spacecraft as the Earth rotates on its own axis.

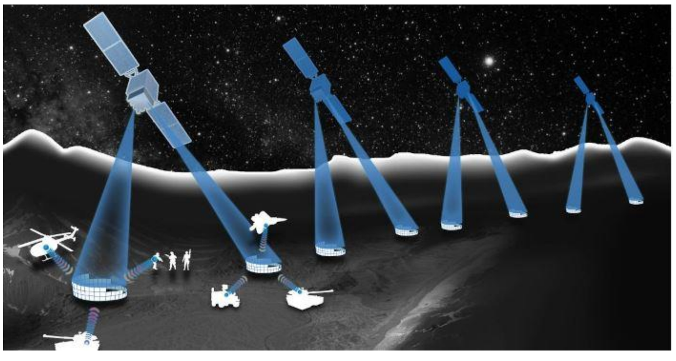

Fig -16: An illustration of a spacecraft sending information to and receiving information from a DSN antenna.

Navigation

During cruise, the Deep Space Network antennas pick up signals from the spacecraft that tell navigators where the spacecraft are located. Engineers cannot physically see the spacecraft with the naked eye or a telescope, and they rely on radio "tracking" to know where the spacecraft are at any given time. Like a game of "Marco-Polo," the DSN listens for signals from outer space and can detect where the spacecraft is from where the sound comes from.

This navigation service is called "tracking coverage" and it includes Doppler, ranging and delta differential one-way ranging, or "Delta DOR."

Doppler Data

In order to calculate the speed that a spacecraft is flying, engineers use Doppler data to plot velocity along the line of sight between Earth and the spacecraft.

Most people are familiar with the phenomenon of a car horn or train whistle changing its frequency as it moves towards or away from them. Electromagnetic radiation (e.g. light waves or radio signals) also experience this effect. The size of the frequency shift, or "Doppler shift," depends on how fast the light source is moving relative to the observer. Astronomers often refer to the "redshift" and "blue shift" of visible light, where the light from an object coming towards us is shifted to the blue end of the spectrum (higher frequencies), and light from an object moving away is shifted towards the red (lower frequencies).
The Earth Science Laboratory spacecraft communicates with controllers on the ground by radio signals. Ground controllers know the frequency of the signal that is emitted from the spacecraft. However, since the spacecraft is moving away from (or towards) us, this frequency is being Doppler shifted to a different frequency. So, engineers (or, more accurately, computers) compare the received frequency with the emitted frequency to get the Doppler shift. It's then straightforward to find the velocity that would cause the resulting Doppler shift.

Acknowledgement

Despite the fact that the Earth has provided us with all of the necessary resources for our existence. The numerous levels and domains of life, as well as the biosphere, lithosphere, atmosphere, and hydrosphere, are in perfect harmony. As a result of this coordination and synchronization, we might be able to live a long and healthy life here on Earth.

Numerous factors, including increasing sound, vibration, heat, and climate change, are depleting Earth's resources. The depletion of our Earth's resources is evident in all of these signs, and it is time to save our planet: The ice is going away; woodlands are consuming; the fields are dry and empty; oceans are unsteady; the water is imperfect and vibrates at a higher frequency. We can help ourselves by reducing the earth's vibration.

Earth by God not by us

Reference

1. Priya M.S in honor of her Intelligence work on Multilevel Image Thresholding using OTSU's Algorithm in Image v Segmentation International Journal of Scientific & Engineering Research Volume 8, Issue 5, May-2017

2. A Mohamed Wahid, Intelligent Auto Horn System Using Artificial Intelligence. International Research Journal of Engineering and Technology (IRJET) Volume: 09 Issue: 11 | Nov 2022 www.irjet.net

2. Delphis S.A., Kifisia, Greece.

3. Francesco Aletta Department of Information Technology, Ghent University, Ghent 9052, Belgium.

4. Bornmann, L. What is societal impact of research and how Can it be assessed. Munich.

5. Botteldooren, D.; Lavandier, C.; Preis, A.; Dubois, D.; Aspuru, I.; Guastavino, C.; Brown, L.; Nilsson, M.; Andringa, T.C. Understanding urban and natural Soundscapes. In Proceedings of the Forum Acusticum 2011 Conference, Aalborg, Denmark.

6. Claire M. Coyne, Santa Ana College. California.

7. https://www.un.org/en/climatechange/science/causes-Effects- climate-change

8. Michael Carlowicz Earth Book, NASA

9. David G. Lowe. Distinctive image features from scale-Invariant Key points. International journal of computer Vision, 60, 2004.

10. Edouard Oyallon, Julien Rabin, "An Analysis and Implementation of the SURF Method, and its Comparison To SIFT", Image Processing On Line.

11. https://www.nrdc.org/about

12. https://www.un.org/en/actnow/ten-actions

13. https://cbd.cmu.edu/news/2023/ai-method-uses-Transformer-models-to-study-human-cells.html

14. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9517575/

15. R. Shane Tubbsshanet@seattlesciencefoundation.org Department of Anatomical Sciences, St. George's University, True Blue, Grenada

16. Clarke E (1981) the historical development of Experimental brain and spinal cord physiology before Flourens. The Johns Hopkins University Press, Baltimore. Translated from: Neuburger M (1897) Die historische Entwicklung der experiment Ellen Gehrinund Ruckenmarksphysiologie or Florins. Stuttgart: Ferdinand Enke Verlag.

17. Space.nasa.gov. USA