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Georgia Tech Model United Nations

#GTMUN2024

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#GTMUN2024



Letter from the Secretary General

Dear esteemed delegates,

Welcome to the twentyfifth edition of the Georgia Model of United Nations. I am incredibly excited to be your Secretary General for GTMUN 2024!

My first Model UN conference was GTMUN, six years ago, and it's given me a joy and passion for diplomacy that has lasted since. This year, the secretariat team has worked extraordinarily hard for months to assemble an incredible array of committees and topics to test your abilities and push you to grow as a delegate and as a future leader. As a person who was in your position six years ago, reading the GTMUN background guides, I know how it feels to prepare for a committee. Though this resouce is invaluable, I encourage you to go beyond in terms of studying about your topic(s) and your country's diplomatic position. I firmly believe that the greatest moments in Model UN happen when you have resiliently prepared through different resources to bring your member state's view into the committee. It is a sincere hope of mine that you enjoy the conference, and take the fullest advantage of what GTMUN has to offer, from public speaking skills, to critical thinking and policy creation. It is opportunities like these when you can connect with fellow, like-minded delegates to bring ideas into the table and construct the progress that people across the globe need, and that only the United Nations can deliver.

GTMUN is an amazing chance to brainstorm to solve current issues creatively and practicing being the leader of tomorrow. I wish you the best in preparing for and participating at the upcoming conference!

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GTMUN XXV Secretary General Jonah Isaza





Introduction to the Committee

Established in 1992 by the United Nations Economic and Social Council (ECOSOC), the United Nations Commission on Science and Technology for Development (CSTD) serves as a platform for promoting international dialogue, cooperation, and policy guidance on harnessing the potential of science and technology for sustainable development. Furthermore, it aims to provide a forum for Member States to discuss development of science, tech, and innovation and frequently converses about technology transfer between participating nations, bridging the digital divide, promoting sustainable development, and enhancing capacity-building (i.e. putting resources into advancing the next generation) in developing countries.

First established in 1992, the CSTD adopted the Program of Action for the Least Developed Countries in 1993, launched the World Summit on Info Society in 2005, and adopted the 2030 Agenda for Sustainable Development in 2015; ever since, the committee has focused on facilitating dialogue and cooperation on STI initiatives and policies, providing, ECOSOC advice when relevant, and conducting studies and reviews on tech-related topics globally.¹

The CSTD committee strives to embody a diverse and inclusive approach to advancing global development goals. The Committee on Science and Technology for

Development (CSTD, est. 1992) is a subsidiary body of the United Nations Economic and Social Council (ECOSOC). The committee aims to provide a forum for Member States to discuss development of science, tech, and innovation and frequently converses about technology transfer between participating nations, bridging the digital divide, promoting sustainable development, and enhancing capacity-building (i.e. putting resources into advancing the next generation) in developing countries. First established in 1992, the CSTD adopted the Program of Action for the Least Developed Countries in 1993, launched the World Summit on Info Society in 2005, and adopted the 2030 Agenda for Sustainable Development in 2015; ever since, the committee has focused on facilitating dialogue and cooperation on STI initiatives and policies, providing, ECOSOC advice when relevant, and conducting studies and reviews on tech-related topics globally. ¹ ²



Position Papers

A position paper is a document which expresses a member state's policy or position regarding the topic(s) that will be discussed in the committee. It can also help as a forefront to ideas, perspectives, solutions, or approaches that a delegate expects to prioritize in committee. It is recommended that a position paper includes the following: **a) member state's view on the topic(s)**, **b) information on how the nation has addressed (or not) the issue in the past, c) proposed solutions based on research and policy.**

Sample Position Paper

The United Mexican States Committee: Commission on Narcotic Drugs Topic Area: Heroin Trafficking

"My sole ambition is to rid Mexico of the class that has oppressed her and giving the people a chance to know what real liberty means. And if I could bring that about today by giving up my life, I would do it gladly"

Although "El Centauro del Norte" spoke these words during the Mexican Revolution more than a century ago, the Mexican people are far from knowing the meaning of "real liberty". Mexico is suffering the consequences of being a key player and a large contributor in a growing illicit drug market, which each year seems to be more diversified and more difficult to trace. Mexico's protagonic and problematic stance provoked former president, Felipe Calderón, to declare open a new theater of the War against Drugs in 2006, as a strategy to counter the violence of the cartels. The low-intensity conflict has left a toll of more than 150.000 deaths and 23.000 disappearances. These painful numbers have placed Mexico as the second most dangerous country in the world.

Currently, drug trafficking and organized crime industry in Mexico is like energy: it is not destroyed, but transformed from one form to another, since each cartel dismantled by the Mexican Government gives way to more small and irrepressible groups. The strategy of the war on drugs, which was based on punctual operations to eliminate the highest branches of the cartels, has not had the desired results.

Mexico recognizes that instead of addressing the problem by the branches, we must change our strategy and attack it from its roots. The first step is understanding that fiercely repressing the violence of the cartels only results in the bloodshed and loss of precious lives of innocent citizens. We invite fellow representatives to consider our modern history, experiences and learnings as a reference.

The United Mexican States notes the necessity to promote the enhancement of international cooperation and exchange of information with the purpose of strengthening the common front in the face of transnational organized crime. For this reason, we must take the responsibility of attending and repairing the social damage of vulnerable communities that are bonded with illicit drug markets. Furthermore, we must develop integral prevention programs against violence, exclusion and weakening of the social tissue, aiming towards the most vulnerable demographics.

TOPIC 1 Using Space Technology to benefit developing countries

Key Terms and Acronyms

| Satellite | Devices placed in orbit around Earth or other celestial bodies, used for communication, weather forecasting, navigation, and scientific research. ⁹ |
|--|---|
| <i>Space Shuttle</i> | A reusable spacecraft developed by NASA, used for missions including satellite deployment, space station construction, and scientific research. |
| International Space Station (ISS) | Suppression of words, images, or ideas. |
| <i>Communication</i> Systems | Technologies used to send and receive information between Earth and space missions, including radio signals and data transmission systems. |
| Information Com- munication Technol- ogy (ICT) | The use of computing and telecommunication technologies, systems, and tools to facilitate the way information is created, collected, processed, transmitted, and stored. |
| Global Positioning System (GPS) | Accurate world wide navigational and surveying facility based on the reception of signals from an array of orbiting satellites. |
| <i>Commercial Space Flight</i> | The use of space technology for commercial purposes. The com- mercial spaceflight industry derives the bulk of its revenue from the launching of satellites into the Earth's orbit. |
| Capacity Building | The process of developing and strengthening the skills, instincts, abilities, processes and resources that organizations and commu- nities need to survive, adapt, and thrive in a fast-changing world. |

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Introduction

Though space exploration has historically been dominated by a handful of technologically advanced nations, the democratization of space has brought in a new era where developing nations can potentially harness the power of space technology for their socio-economic development. In this committee, we will delve into the significance of using space technology to benefit developing nations, exploring how it can address pressing challenges, foster sustainable development, and pave the way for a more equitable global future.

Technology that has come to be from space exploration often gives the idea of futuristic inventions mostly usable by astronauts, however, humanity would not be here today without exploration of space technology. Space technology has greatly impacted the way humans navigate, recycle, and even communicate amongst many others.³ It is the responsibility of the CSTD to guide collaborative efforts into a direction that is advantageous for all when it comes to the future of space technology. While space technology is a relatively new and uncharted area, the CSTD has been involved with creating avenues for global collaboration in many fields. The CSTD committee was involved in the creation

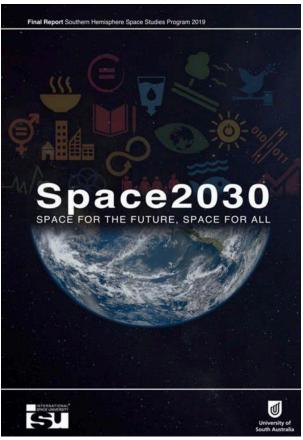
of the Technology Facilitation Mechanism (TFM).⁴ The TFM was implemented by the UN to encourage sharing information and experiences on multiple levels ranging from Member States to entities in the private sector.⁵ Since its creation the TFM has garnered the support of thousands of entities many of which had never been previously involved with the UN. The biggest successes of the TFM include the Technology Bank (TB) for Least Developed Countries and the 2030 Connect Program. The 2030 Connect Program brings in public and private entities as well as the UN's own library to facilitate the sharing of technology and information. The TB allows this information to be used to the fullest by developing countries to close the alobal digital divide.⁶ This is accomplished by capacity building in developing countries through global exchanges and training that works with the current level of infrastructure in developing nations. The TB and Istanbul International Centre for Private Sector in Development (ICPSD) started working together a year ago.⁷ This program still is looking to scale to have a bigger impact, but is a good example of a program that facilitates technology transfer between a variety of different states.

The CSTD has also been a supporter of information and communications technologies (ICTs) and their role in advancing progress with the 17 sustainable development goals (SDGs). ICTs could make a huge impact on bridging the digital divide and many ICTs are based within space technology.⁸

History

Space has fascinated humanity since ancient times, with many different cultures and areas independently achieving very advanced predictive ability as early as 1 BCE.¹⁰ However, the technology to explore space has emerged much more recently. The first satellite in space, Sputnik 1, was sent less than a century ago in 1957.¹¹ This achievement and the rivalry between the Soviet Union and the United States launched a space race with remarkable outcomes for human progress. In 1962, the United States launched Telstar, which allowed for transatlantic television broadcasts and opened up communication globally.¹² Space technology might have had a competitive start, it quickly evolved into a facilitator of global collaboration.

One of the most well-known uses of space technology currently is the Global Positioning System or GPS. GPS has completely changed the way humanity addresses many fields including, transportation, agriculture, disaster response and many others.¹³ The UN's Committee on the Peaceful Uses of Outer Space (COPUOS) has been central in developing guidelines and treaties that govern space activities.¹⁴ COPUOS now has numerous programs to capacity build in developing countries as well as opportunities for space exploration and technology geared towards women, youth, and other minorities. Some of these opportunities allow for others to reap the benefits of space technology on Earth such as experimentation with medicine in microgravity or the benefits of having knowledge of sending a satellite into space. Over the past century legislation has been put into place regulating and monitoring space technology. The largest of which was the Outer Space Treaty in 1967. This treaty establishes principles such as the exploration and use of outer space for the benefit of all countries, prohibiting national appropriation of outer space.¹⁵ The UN also backed the Moon Agreement of 1984, which seeks to ensure that the Moon and other celestial bodies are used for the benefit of all countries.¹⁶ Additionally, the UN has supported initiatives like the Space2030 Agenda, which aims to harness space technology for sustainable development on Earth. Some examples of other smaller or regional agreements include the European Space Agency (ESA) or the International Space Station (ISS).¹⁴ All of which have been done in order to further research and exploration into space in a fair manner.



2030: Space for the future, space for all

Space technology started out with the intention to get objects in space and now has grown to encompass earth and outer space communication as well as high level monitoring and utilizing the different atmospheric conditions provided by space. When Sputnik launched in 1957, it marked the dawn of the space age and opened up a new era of exploration. The Apollo moon landings in the 1960s showed us that humans could travel beyond Earth and sparked a wave of innovation. These early missions led to the development of technologies that we now take for granted, such as satellite communication, GPS, and

even advancements in materials used in everyday products. For instance, materials originally developed for space missions, like Teflon, are now common in non-stick cookware. The technology behind scratchresistant coatings was adapted from space research and is used in eyewear and other surfaces. Additionally, innovations in compact, efficient batteries from space technology have led to better performance everything from smartphones in to hearing aids. Today's tech builds on this foundation, with satellites enhancing global connectivity, weather forecasts, and navigation systems, while space telescopes like Hubble give us vast resources to learn about the universe.



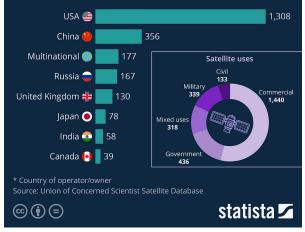
NASA's Spinoff Technology

Current Situation

Telecommunications and internet access are being expanded into regions without infrastructure to help close the digital divide. Companies like OneWeb and Starlink are expanding internet access here on Earth with the use of satellites in space. Apart from bridging connections, satellite imagery can also be extremely helpful on the agricultural and climate front. Many places are facing unreliable access to food and the weather and to mitigate this, land monitoring systems from satellites can provide a system to reap more efficient crop yields. Furthermore, land monitoring can do more than just analyze agriculture, when disaster strikes, satellites can provide a monitor of current conditions and help disaster responses, which is especially effective in vulnerable areas. Developing countries and countries in the global south are often more at risk of climate disasters and these often have a greater impact. Satellite imagery mapping out land usage and monitoring climate conditions could play a huge role in how countries make decisions surrounding land and disaster relief.

The Countries With the Most Satellites in Space

Satellites currently orbiting Earth by country^{*} (as of April 2020)



The countries with the most satellites in Space

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In the effort to use space technology to benefit developing nations, the question appears of who is funding and what influence they possess. In the aforementioned example of Starlink and expanding internet, Starlink expanded internet into Ukraine but had turned it off at specific moments rendering Ukraine vulnerable at the whim of Starlink.¹⁷ Verv few programs have successfully been able to send objects into space and most of these countries are part of the global north.¹⁸ While initiatives starting to include technology and information transfer to many countries, space technology and research still has a very high barrier to entry.

Furthermore, within the agricultural and food industries, satellite images have provided the ability for farmers to monitor

crop health, better predict yields, and identify which parts of farms might be vulnerable to drought or pests. Satellites also help predict weather, enabling farmers to devise improved plans on how to grow their crops.

Satellites are also useful as early warningsystems for natural disasters, enabling LDCs to better prepare for them and evacuate people if needed. Additionally, they can be used to monitor the situation of ongoing natural disasters, therefore helping relief and aid efforts.

Resource management can also be done via satellite, with nations monitoring the status of their water bodies, and other natural resources such as forest in order to better manage them and prevent illegal activities that might hurt the nation or environment.

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An example of space technology being used effectively within an LDC is within the farming sector.¹⁹ Nearly half of the 170 million residents of Bangladesh work or live around farms, and farming is a vital part of Bangladesh's economy, as such they have partnered with NASA as a part of the IRAS (Integrated Rice Advisory System) program. The program uses satellites to gather data about how much water is being used by the farmers, how much their crops need and water supplies. It is estimated that this could reduce water waste in Bangladesh

by 30%, and fuel consumption by 45%, saving the country 115 million usd in fuel subsidies for farmers and reducing carbon emissions by 300,000 tons per year.²⁰ The system works by measuring precipitation and groundwater within the areas around farms, and then uses that data to calculate how much water the rice needs. Within Bangladesh, Synthetic Aperture Radar (SAR) is also used, as it is able to assess flood extent and damage, providing information regarding damage to and potential impact on agricultural production, fishery resource and navigation. These technologies have had a significantly positive impact on the economy of Bangladesh and the lives of its citizens, as they have facilitated the farming process, made it more efficient, reduced climate impact and made it easier to assess damages during monsoon season.

Thus it can be seen, there are a variety of aspects of modern life that space technology can aid with that demonstrate that space technology can have innumerable benefits to humanity, but that this technology needs to be scrutinized and guided forward with altruistic intentions.

Directives/ QARMAS

- What methods can be used to share access to space technology more equitably?
- Which ways can space technology be made accessible by countries independently?
- With the rise of private sector independent space exploration, what ways can private and public sectors work together in the future of space exploration?
- With the high cost of space exploration and research, what sectors are worth the money and time researching for the greatest benefit to humanity?

TOPIC 2 Improving the Use of AI in Medicine: Leveraging the benefits while mitigating drawbacks

Key Terms and Acronyms

| Machine learning | A field centered around AI where algorithms to predict or analyze information improve through experience. In medicine, it can be used to predict patient treatment options. |
|--|--|
| Deep Learning | A subset of machine learning that is used to perform more specific calculations on possible problem areas. It's used in medical imaging to identify tumors or other biological anomalies. |
| <i>Natural Language</i> <i>Processing (NLP)</i> | A field centered around AI that focuses on human language processing. In medicine, it's used to analyze medical records (i.e. translation from physical to digital media) and to aid in doctor-patient communication (i.e. surpassing language barriers) |
| Predictive Analytics | Utilizing historical data to predict future outcomes. This aids in disease and outbreak forecasting as well as prediction of patient behavior. |
| Diagnostic Imaging | <i>The usage of AI in the analysis of imaging data (CT scans, MRIs, and X-rays) in condi- tion diagnosis.</i> |
| Robotic Surgery | The usage of robotic tools (either powered by Al or handheld) that allow for aid in the performance of precise and minimally-invasive surgeries. |
| Personalized Medi- cine | The tailoring of medical treatment to the individual characteristics of each patient, something which can be facilitated through the analysis of family history and other genomic data. |
| Health Informatics | The intersection of information science and healthcare, something primarily used to improve patient care. |
| Telemedicine | The use of digital communication tech to provide healthcare remotely, particularly in underserved areas. |
| Genomic Medicine | Al techniques that are used to analyze genetic data and understand diseases better. |
| Drug Discovery | Al models that are used to identify potential new drugs and predict their effects. |
| Electronic Health Records (EHR) | Digital versions of patients' paper charts. |
| Federated Learning | A method of training machine learning models across data and information from multiple institutions while keeping data decentralized/untraceable, ensuring the privacy and security of those the information belongs to. |

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Introduction

The integration of artificial intelligence (AI) into healthcare systems offers a variety of opportunities to aid in improving success rates, enhancing diagnostics, and optimizing treatment methodologies. However, Al's usage in medicine also offers a large number of ethical, legal, and capacity-based challenges, especially in developing countries. Multiple scandals have occurred all over the world since AI has been enforced in healthcare, and many of those failures have offered opportunities to pave the path to success for policymakers, or to insist upon avoiding the technology altogether.

The Committee on Science and Technology for Development (CSTD) offers a number of these nations a platform for international collaboration and policy development, and as the omnipresence of artificial intelligence becomes more prevalent in society, we question how the technology should be enforced nation-by-nation, usage-by-usage, and piece-by-piece.



based systems and symbolic reasoningits initial applications were primarily solely for decision support, particularly in the medical diagnosis setting. In the 70s, scientists propagated the introduction of machine learning algorithms for pattern recognition and data analysis, resulting in the emergence of early AI systems imaging medical for interpretation. Following the tech boom in the 90s, it became common to see the integration of AI into medical imaging systems, including MRI, CT, and X-ray scanning, and the development of natural language processing (NLP) systems allowed for easily extracting medical information from written text, furthering the impact of the new technology in the practice. Since the tech boom of the 2000s, rapid advancements in deep learning algorithms and neural networks are revolutionizing medical AI; there are currently applications of AI in personalized medicine, genomics, drug discovery, risk mitigation, etc.²² Currently, medical AI has been used largely across developed countries and has made it to the governmental stage- the FDA, NHS, and China's healthcare sectors have all incorporated partnership with AI companies into their own offerings, and more developments are being made with regards to doing so.

During the 50s, artificial intelligence, or Al, began early development focused on rule-

Current Situation

Currently, AI applications in medicine in developing countries are still in the early stages. Developing countries face challenges such as limited infrastructure, funding, and skilled personnel, stopping widespread implementation of any existing tech. Despite challenges, AI application is expected to greatly improve healthcare outcomes, enhance diagnostic accuracy, and optimize treatment.²³ AI initiatives in developing countries often specialize on telemedicine, disease surveillance, and public health interventions to target specific matters that the current healthcare infrastructure of those countries doesn't provide.24 At the present moment, the CTSD's primary focus is on ensuring that health innovation should be contextualized and inclusive, addressing local specificities and inequalities, and integrating economic, social, and environmental dimensions to promote sustainable development for all.²⁵

With all of this in mind, on the proprietary side, countless innovations have been made with regards to Al usage in medicine in developed countries. Robotic surgery, drug discovery, and telemedicine have long since been integrated as features in the modern practitioner's office, with most research hospitals in the US and Europe incorporating all three of these features in their daily lineup. Developments in genomic analysis have been fostering large breakthroughs in early prediction of disease,²⁶ and Google's incoming DeepMind has created tools that identify eye diseases using retinal scans to predict possible deterioration.²⁷

Case Studies

There have been a number of instances in which AI in a medical context has failed to operate correctly. IBM Watson for Oncology, which was initially made to diagnose and recommend cancer treatment, faced significant challenges after beginning to suggest incorrect and unsafe treatment options early on into its training. More specifically, the system generated recommendations based on hypothetical scenarios as opposed to those that made sense using real patient data, leading to discrepancies between the suggested treatments and those that oncologists found ideal. Luckily, the treatment options were only provided on sample data, but it served as an early warning against the possibilities of malpractice and other threats that AI may present in medical practices.^{28 29}

Subsequent years came with equivalent challenges around the world- incidents like the Babylon assisting chatbot case in the UK and Rwanda, in which the bot failed to identify serious conditions in patients and severely damaged the reputation of the company, continued to spur fears of medical malpractice throughout the globe.^{30 31} Initially an exciting prospect, as demonstrated by the NHS's partnership with the company, the company's claims of having developed a technology that surpasses a doctor easily highlighted the lack of established policy in the countries that endorsed the technology and were also speedily debunked by a lack of supporting evidence.

And these instances haven't gone unnoticed. In an Australian survey, for instance, fears of medical AI have skyrocketed– interviews highlight individuals' concerns with medico-legal, ethical, diversity and privacy issues with a lesser emphasis on medical practices that the AI may be focusing on.

Nonetheless, medical AI has been proven to have a huge effect on the infrastructure of developing countries– Qure AI has been utilized in India to offer assisted healthcare and Babyl remains one of the number one healthcare applications in Rwanda despite the aforementioned controversy. ³²

Directives/ QARMAS

- How can the CSTD further its understanding of the technologies involved/the ethical implications of utilizing them? Can your country help the spread of knowledge and technology?
- From where can the CSTD obtain funding to spread the necessary technologies?
- How can the stigma surrounding medical AI be mitigated, especially in developing countries?
- In what ways could we see countries benefiting from the usage of medical AI? How should the CSTD combat any ethical concerns?
- How should the healthcare industries of developing countries be improved in order to allow for effective usage of medical AI? In what ways can your country contribute to this idea?

 How should your government regulate the usage of AI in medicine? How do these stances apply to other countries? How would you select which companies to allow partnership with?

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