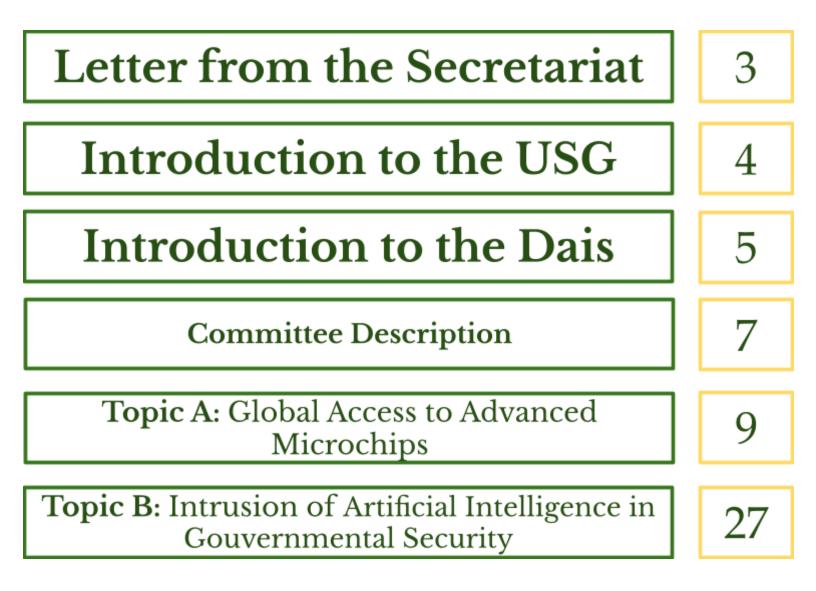# CSTD

TOPICS: Global Access to Advanced Microchips, Intrusion of Artificial Intelligence in Government Security
CHAIRS: Hudson Long, Shelby Wallis

LAIMUN XXIX

December 2-3

☖ LAIMUN XXIX ☖

LAIMUN XXIX   *December 2-3*

Letter from the Secretaries-General

Dear Delegates,

On behalf of our entire staff, it is our pleasure to welcome you to Session XXIX of the Los Angeles Invitational Model United Nations (LAIMUN) conference. LAIMUN XXIX will take place on Saturday, December 2 and Sunday, December 3 of 2023 at the Mira Costa High School (MCHS) campus.

Our staff, composed of over 120 MCHS students, has been working tirelessly to make your debate experience the best it can be. You will find your dais members to be knowledgeable about the issues being debated and MUN procedure. We pride ourselves in hosting a conference that is educational and engaging, and we hope you take advantage of that as you prepare and debate.

At LAIMUN, we value thorough research and preparation. We ask that delegates write position papers following these directions. The deadline to submit position papers to be considered for Committee and Research Awards is Friday, November 24 at 11:59 PM PT. The deadline to submit to be considered for Committee Awards is Thursday, November 30 at 11:59 PM PT.

We also encourage all delegates to read the LAIMUN Rules of Procedure for conference-specific information and as a reminder of points and motions that can be made during committee.

Feel free to reach out to our staff with any questions or concerns you may have. Delegates can find their chairs' contact information next to their committee profile and the Secretariat's email addresses on the staff page. Any member of the LAIMUN staff will be happy to assist you.

We look forward to seeing you in December!

Sincerely,

Akash Mishra and Lily Stern
Secretaries-General, LAIMUN XXIX
secretarygeneral@mchsmun.org

Introduction to the USG

Hi delegates!

My name is Claire Koerber and I am the Under-Secretary General of the Economic and Social Council (ECOSOC) for Mira Costa Model UN; I am excited to welcome you all to LAIMUN XXIX.

The advanced and novice ECOSOC committees cover a variety of prevalent international issues that require multifaceted approaches and solutions. Each delegate brings a unique perspective into debate and it is important to use creativity in developing solutions while also paying attention to country policy. Your chairs will hold you to high standards in regards to solutions, speeches, caucusing, and diplomacy, so please be sure to keep this in mind.

To ensure you are adequately prepared for debate, please submit your position papers promptly to your chairs. All work should be your own. This goes for all preparation, speeches, solutions, and resolutions as well. LAIMUN has a strict no pre-written resolution policy, and resolutions should only be worked on at the chair's discretion. Be sure to act respectfully in committee towards fellow delegates and chairs.

I hope LAIMUN XXIX provides you with lasting memories and educational experiences. Our LAIMUN staff do their utmost to give all delegates the best experience possible. We want all delegates to gain knowledge, confidence, speaking skills, and most importantly, a new understanding of international relations and the current events around us that affect the way we live today. Throughout the weekend, make sure to participate and stay engaged during debate. Who knows…if nothing else, you may actually learn a thing or two.

If you have any questions or concerns, please don't hesitate to reach out to ecosoc@mchsmun.org or any other secretariat member. Looking forward to seeing you in December and best of luck in your preparation towards success!

All the best,

Lily Stern and Akash Mishra   Claire Koerber
Secretaries-General   Under-Secretary General ECOSOC

Introduction to the Dias

Welcome to LAIMUN!

My name is Hudson Long and I am a senior at Mira Costa. I've been participating in model UN since my freshman year and have loved everything about international relations and diplomacy, specifically trade policy. Which is why I'm so excited to be able to debate about semiconductor access tensions between the West and East. I hope to hear specific solutions with detailed plans to reach a compromise which can lower tensions but not undermine the west's advantage. Artificial intelligence will become a part of our day-to-day lives, and therefore, our governments. It's important to watch out for abuses of this technology before it is too late.

Outside of Costa MUN, I love to surf, play music, and rock climb. I'm very fortunate to live right next to the beach where the ocean is available to me at all times. I also play guitar, piano, bass, and some drums. Music always helps me calm down and provides a creative outlet I can't find anywhere else. Lastly, I have been avidly rock climbing in the past year, a great way to get a workout in and have fun. Currently, I climb V6s, but I hope to stay injury free and continue.

I couldn't be more excited to chair this upcoming debate, and as a final word of advice, stay on policy and give us some great substance! I wish you all good luck and I will see you on December 2nd! Please reach out with any questions to the committee email at **cstd.adv.laimun.xxix@gmail.com** and we will be happy to answer.

See you soon,

Hudson Long

Hello Delegates!

My name is Shelby Wallis, and I will be your co-chair, along with Hudson Long, for this conference. I am a junior at Mira Costa and have been a part of MUN since my freshman year, and have participated in many local conferences. I have also been lucky enough to attend a few of the travel conferences we go to here at Costa, such as MUNUC in Chicago and SSUNS in Montreal. This year will be my third time participating in LAIMUN!

Apart from MUN, I am an intern at SOLA Physical Therapy as well as Beach Cities Medicine. At school I am one of the board members of iACT club, which works alongside a local NGO to aid refugees in conflict zones. I have been on track at Costa since my freshman year, and love to surf in my free time. I love to travel, and have been to thirty two countries so far. Art history and cultural studies are interests I enjoy, as I am enrolled in cultural classes at El Camino college. I adore cooking, and many recipes come from the time I spent living in Italy.

I am greatly looking forward to your countries' stances on our topics, especially considering the contemporary aspects of the debate. I would love to have an orderly and attentive committee that is diplomatic and respectful to their fellow delegates. We are looking for delegates that explore the subtopics that are in these topics, and create applicable solutions. Reach out to us with any questions or concerns at cstd.adv.laimun.xxix@gmail.com, I am so excited to meet all of you and make LAIMUN an incredible experience.

Sincerely,

Shelby Wallis

Committee Description

The Commission on Science and Technology for Development (CSTD) was established in 1992 after the UN Conference on Science and technology for Development in 1979 was transformed into a functional commission of ECOSOC. The CSTD is the UN platform to discuss the advancement of science and technology that is so prevalent in our world today. Since its first meeting in 1993, the CSTD has been responsible for increasing understanding of technology and science in the underdeveloped world, regulating the implementation of actions outlined in United Nations resolutions, and examining crucial questions regarding science and technology. Currently, CSTD has 43 member states which are elected into four year terms by the United Nations Economic and Social Council.[1] The division of the member countries is as follows: eleven members from Africa, nine from Asia, eight from Latin America and the Caribbean, and fifteen from Europe and North America.

Without modern technology, new solutions to recurring/current problems would not be possible. The CSTD allows us to manage the use of this new technology in international problem-solving. The ethical concerns and feasibility of newly developed technology is a very important topic as "more than ever before, people risk being left behind as technology and innovation outpaces both their and Government's ability to keep up" (UNCTAD). The digital divide is growing and we lack the resources to contain the expansion of technological advancement while also protecting the security and privacy of society. The goal of CSTD is to facilitate discussions that address these issues. As a subsidiary body of ECOSOC, the UN

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[1] http://unctad.org/en/Pages/CSTD/CSTD-Membership.aspx

Conference on Trade and Development (UNCTAD) has been hosting the CSTD secretariat since 1993 for their annual meeting in Geneva, Switzerland. In an ever changing world where our reliance on advanced technology is growing, CSTD plays a crucial role in society.

Topic A: Global Access to Advanced Microchips

I.   Background

Since the invention of the computer, computing power has been a primary determinant for defining global superpowers, so international military capabilities in technology are gauged with semiconductors in the limelight. The power of these semiconductors is determined by the amount of transistors they contain. Moore's Law states that the number of transistors on advanced microchips will double every two years, and since its creation by Gordon Moore in 1965, it has held up roughly well. This exponential growth means that a group or government only a couple years behind in this technology will be worlds away from the military or civilian computing capabilities of the nations trailblazing this innovation. And for the history of microchip development, these nations have been the United States (US), Japan, Taiwan, and the Netherlands. Furthermore, both the existing chip shortage and the emergence of the Russo-Ukrainian War has only exacerbated previously existing tensions in relation to the current centralized production of advanced microchip production. Plus, with dwindling remaining natural resources for much of this production, eastern and underdeveloped nations are keen to gain some stake in the process. Additionally, with a wave of artificial intelligence application in government and military, demand for these advanced chips is only growing from international groups.

The supply chain for chips has always been tight. The growth of the technology began in the US, with the first patent being received in 1959.[2] For the following decades, design and production both took place in the new technology hub of the world, the US. This technological overhaul did not only take place due to privatized industrial competition, but from heavy American investment in the hopes of achieving new military potentials. This heavy investment kicked off a period of mass production of microchips, and they entered the homes of every American. Since this period, US firms have outsourced all of the manufacturing and assembly work to the Netherlands, Japan, and Taiwan. The Netherlands holds its stake through ASML Holdings Inc., where crucial manufacturing equipment is developed. Taiwan's "Taiwan Semiconductor Manufacturing Company Limited" (TSMC) is home to the world's primary fabrication plants. After a stumble during the recent chip shortage, Japan is making strides to catch up, ditching some nationalized economic policy in favor of subsidizing semiconductor firms and international cooperation.[3] China has begun taking large steps to shift this status quo in the east's favor. Accusations have been made by ASML that ex-employees have stolen data about their EUV Lithography Machines, and expert analysts have claimed that chips made at one of the largest Chinese firms,Yangtze Memory Technologies, are nearly identical to those produced by Samsung in South Korea, providing more evidence of the alleged heists and copying. Lastly, firms in China have been purchasing chips and other assets directly from American companies,

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[2] Bellis, Mary. "How the Integrated Circuit Changed the World." *ThoughtCo*, 6 Apr. 2017, www.thoughtco.com/history-of-integrated-circuit-aka-microchip-1992006.

[3] Dooley, Ben, and Hisako Ueno. "Japan Once Led the World in Microchips. Now, It's Racing to Catch Up." *The New York Times*, 4 Aug. 2022, www.nytimes.com/2022/08/04/business/japan-semiconductors-chips.html.

then distributing that information and technology to the Communist Party. This crescendoed into massive bipartisan US legislation in 2022 which places heavy restrictions and bans on the selling of semiconductor technology to China or for American citizens to work in many Chinese tech companies.[4] Other legislation, mainly under the Chips and Science Act invests a large pool of money in the US chip supply chain. This was done both as a matter of protecting their domestic production and its heavy presence in the US economy, as well as a matter of national security due to the fear that American tech had given China the boost it needed to create the strongest and most modern military force in the world.

Economic interdependence has long been thought to be a major strategy for reducing global conflict, but if global peace continues to rely on this idea, it will be challenged by barriers put up by the US, Dutch, Chinese, and other strongly aligned nations. Previous export tariffs implemented by the Trump administration on certain goods showed to greatly increase the burden on consumers in both the US and China.[5] And the "good" that global foreign and export policy will be based on for the foreseeable future is undoubtedly microchips. Especially with increased and initial implementation of AI into military and civilian fields. The microchip is dual-use, it can both power a car and a tank; both a washing machine and an automated drone (as demonstrated by the fact that Russian soldiers have been pillaging Ukrainian dishwashers to

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[4] "Explained: How Americans in Chinese Tech Firms Might Have to Choose between US Citizenship and Job." *Https://Www.Outlookindia.Com/*, 15 Oct. 2022, www.outlookindia.com/international/explained-how-americans-in-chinese-tech-firms-might-have-to-choose-between-us-citizenship-and-job-news-230218.

[5] "Trade War Leaves Both US and China Worse off: Un." *UNCTAD*, 5 Nov. 2019, unctad.org/press-material/trade-war-leaves-both-us-and-china-worse-un.

power their equipment).[6] Chinese firms have in the past lied about private and non-military use of chips. In order to limit military usage of AI chips, the US banned certain exports which may cut China off from a global AI revolution in more ways than just overhauling warfare strategy but in business and working-class convenience as well. Neither China or the nation's allies are happy with the prospect of, at any moment, an immediate cut-off by the US in terms of military capacity. Additionally, a plethora of factors have strongly inhibited the ongoing production of advanced semiconductors. A chip shortage started off slightly before (but still exacerbated by) COVID-19, and when countless facilities were closed down it was a big hit to the industry. The Russian invasion of Ukraine has shut the world off from half its neon supply; a crucial ingredient in chip fabrication.[7] The effects of this have largely been seen in the automobile industry.[8]

The current system of a concentrated microchip industry is beneficial to the west, but clearly volatile and likely to raise tensions. If an invasion of Taiwan were to take place, a long term paralysis in nearly every technological industry would be devastating to the global economy (including China's, as their industries also rely on TSMC).[9] This "silicon shield" is why so many countries are willing to go the extra mile in the defense of the Taiwan strait and the island nation,

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[6] Whalen, Jeanne. "Sanctions Forcing Russia to Use Appliance Parts in Military Gear, U.S. Says." *The Washington Post*, 12 May 2022, www.washingtonpost.com/technology/2022/05/11/russia-sanctions-effect-military/.

[7] Person, and Alexandra Alper. "Exclusive: Russia's Attack on Ukraine Halts Half of World's Neon Output for Chips." *Reuters*, 11 Mar. 2022, www.reuters.com/technology/exclusive-ukraine-halts-half-worlds-neon-output-chips-clouding-outlook-2022-03-11/.

[8] Irwin, John. "Chip Shortage Getting Better All the Time ... but Not for Everybody." *Automotive News*, 17 Feb. 2023, www.autonews.com/automakers-suppliers/chip-shortage-easing-unevenly-automakers.

[9] Toews, Rob. "The Geopolitics of AI Chips Will Define the Future of Ai." *Forbes*, 8 May 2023, www.forbes.com/sites/robtoews/2023/05/07/the-geopolitics-of-ai-chips-will-define-the-future-of-ai/?sh=3c9679675c5c.

and also why China is so hesitant to commit to an invasion. Military presence is only growing in the Indo-Pacific region, with the US encouraging more of its Asian and European friends to take on a more American policy in Asia and the South China Sea.[10] They've increased their military bases in the Philippines, brought back old military alliances, and increased communication with Canberra and Tokyo. Plans have been made to both destroy TSMC facilities and evacuate employees if an invasion were to occur, though many argue that China could not operate the fabrication plants. They would lack specific equipment and the knowledge of how to run the facilities. The trade war could continue to escalate and become a tipping point for direct conflict. Strong economic hardship leading to a regime gaining public disapproval has been shown to provoke combat in the past. More soldiers provides just as large of a consequence for warfare as it does a deterrence. Semiconductor policy will be at the center of this situation and it is important to consider policy with the prevention of global warfare at the forefront.

II.   United Nations Involvement

The United Nations has yet to take any specific actions regarding the semiconductor trade war, American export controls, or the congested production process. Though, more generally, the UN has shown itself to be willing to regulate global trade to benefit the global economy. In 1966, the United Nations Commission On International Trade Law (UNCITRAL) was established for a more specific look at the legality of certain export controls or national legislation surrounding tariffs or restrictions on trade. The United Nations Conference on Trade and Development

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[10] Faunce, Liz, et al. "How the US Is Deepening Military Alliances in China's Backyard." *Subscribe to Read | Financial Times*, 1 June 2023, www.ft.com/content/38c13dc2-c2bb-4f56-807a-554310fae483.

(UNCTAD), which is largely responsible for the servicing of CSTD, also plays one of the largest roles. Annually, it publishes the World Tariff Profiles report along with the World Trade Organization (WTO) and works to support international trade in a way that supports the development of less developed countries, for example, promoting the Generalized System of Preferences.[11]

Though it is not directly a part of the UN, the WTO has been near the center of the diplomatic battle between the US and China following the imposed export controls. Following earlier rulings by the WTO regarding illegal US tariff practices, China has filed a complaint to the organization in regards to the October policies. China explained that the legislation was an attempt by the US to ensure its dominance in STEM fields and it risked damaging global supply chains.

There are also broader resolutions from the United Nations Economic and Social Council, such as Resolution 2022/16.[12] This resolution simply recognizes the roles that scientific and technological innovation play in modern geopolitical relations and how they must be monitored in order to maintain the stability of the global economy. Further resolutions and policies displayed by the UN and its bodies have further emphasized its authorization for action in the field of regulating international trade. Though CTAD and the UN as a whole have made these types of commitments in terms of ensuring diplomacy over conflict and valuing

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[11] "Generalized System of Preferences." *UNCTAD*, unctad.org/topic/trade-agreements/generalized-system-of-preferences. Accessed 13 June 2023.

[12] *E Economic and Social Council*, unctad.org/system/files/official-document/ecosoc_res_2022d16_en.pdf. Accessed 13 June 2023.

sustainability, it has yet to take on any specific responsibility for making an attempt to settle American-Chinese tensions over semiconductors or trade policy as a whole.

III. Topics to Consider

A. Prioritizing Civilian Usage

Especially in regards to technological innovation, ensuring that civilians have access to advanced microchips is of paramount importance. These devices serve as a vital element to a countless number of electronic devices, many of which are utilized daily by the public, such as cellphones, tablets, and cars. These microchips have been revolutionary in many fields, such as communications, healthcare,[13] and transportation, and though they are so integral in daily life, access to these devices is often a government priority, rather than a civic priority. With access to this advanced technology, individuals may be able to directly improve their quality of life, whether they utilize these chips for seemingly mundane tasks via smart devices within their home, or pioneer new innovations in the technological realm. It is also important to consider methods of verifying and ensuring civilian usage as part of its prioritization. Civilian use will only be inhibited by a constant skepticism that a geopolitical rival may be powering missiles under a civic guise. Advanced microchips have limitless potential, and ensuring that access to this technology is prioritized in an increasingly interconnected and technologically dependent world is imperative when discussing this issue.

B. Access for Less Developed Nations

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[13] Eltorai, Adam E M, et al. "Microchips in Medicine: Current and Future Applications." *BioMed Research International*, 2016, www.ncbi.nlm.nih.gov/pmc/articles/PMC4914739/.

Within the international community, technological innovation has consistently been seen as a topic of immense importance and magnitude within the realm of global politics. While technology has the capability to bridge socioeconomic gaps and promote economic development, it can simultaneously exacerbate current developmental stage differentials. As advanced microchips are introduced in more sectors of the global economy, countries that may be further behind in development have the potential to surpass traditional socioeconomic progression expectations, allowing for direct integration into the technological innovation of more developed countries. Not only do microchips allow for economic stability within underdeveloped nations, but they can potentially improve the quality of life for citizens within these nations as well. For instance, advanced microchips have been pioneered as a tool to improve the accessibility and affordability of healthcare in less developed countries, as they can significantly improve diagnostic abilities and medical infrastructure,[14] which was especially apparent during the COVID-19 pandemic. And beyond civilian uses, many smaller, less influential, countries may not agree with being left years behind in terms of military power while the west grows their arsenal and increases their global influence. Support from the international community to improve access to this technology may require a multi-faceted approach to allow for financial ability, proper integration into the lives of citizens, and correct utilization.

C. Lowering Tensions in the Western Pacific

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[14] *Made in America: The Facts about Semiconductor Manufacturing*, www.semiconductors.org/wp-content/uploads/2020/04/SIA-White-Paper-Made-in-America.pdf. Accessed 13 June 2023.

Although specific country policy should be the main driver of actions taken during committee, the goal of ultimately lowering tensions and preventing possible warfare should be one the committee strives to reach. The US has been rapidly building its influence over the Asian continent and off-coast islands, sending the Speaker of the House to meet with the Taiwanese president (or vice versa), and is cutting off China from critical supplies that would allow them to surpass the capabilities of the American military. China has responded to many of these "provocations" with military drills on the western coast, displays of new missile technology, and reiterated promises of a coming invasion of Chinese Taipei. The amount of importance that Taiwan plays in the semiconductor industry cannot be understated, and an invasion could kickstart a global recession. Harsher sanctions and restrictions against China could galvanize both their people and the regime to take the momentous step of reintegrating Taiwan out of desperation and as an act in defiance of a western world which may seem opposed to its very development. Though, if the People's Republic managed to get their hands on more modern chip technology, it could only help them further develop their military arsenal in preparation for this same action.

D. The Loss of Ukrainian Neon

Ukraine is by far the largest supplier of neon gas, which is primarily used in lasers and has a high demand.. 90% of that demand is from the semiconductor industry.[15] Following the Russian occupation of the Crimean peninsula in 2014, neon prices rose about 600% and

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[15] *Ukraine, Neon, and Semiconductors - United States International Trade ...*, www.usitc.gov/publications/332/executive_briefings/ebot_decarlo_goodman_ukraine_neon_and_semiconductors.pdf. Accessed 13 June 2023.

shipments were delayed due to Russia-Ukraine border confusion. Similar effects are taking place in the more recent Russian-Ukrainian conflict, and the reaction by companies like TSMC is to immediately diversify.[16] The instability of resources was exacerbated by this conflict and so was the unsafety and volatility of the current high-end microchip supply chain. Firms are making the shift to reduce this risk, but many of them still have their monopolistic holds over parts of production. This scenario both brings up a presiding fear of massive supply disruptions and the massive effect they can have on the global economy (providing some incentive for diversification in all parts of the process, not just neon), as well as another factor to consider in terms of a strained semiconductor supply and higher tensions.

IV.   Case Study: ASML's EUV Lithography Machine

The single biggest choke point in the process for the finalized creation of advanced microchips is the extreme ultraviolet lithography machine (EUV), produced by only one company, the Dutch "Advanced Semiconductor Materials Lithography" (ASML). Though TSMC creates a very large majority of the semiconductor chips (with a small minority produced in South Korea by Samsung), no other party can claim to have completely monopolized any part of production like ASML has. The machines use precise ultraviolet light to carve microscopic designs onto pieces of silicons, and this singular process powers our world. The cost of one of the machines is about $200 million, about 150 have been sold (as of March, 2023), and currently

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[16] "TSMC to Secure Neon in Taiwan after Ukraine Shock for Chip Sector." *Nikkei Asia*, 10 Nov. 2022, asia.nikkei.com/Business/Tech/Semiconductors/TSMC-to-secure-neon-in-Taiwan-after-Ukraine-shock-for-chip-sector.

they have 5 customers.[17] Similar to microchips as a whole, the route that this machine takes is an arduous one. After its building at an ASML location, it is shipped to their headquarters in the Netherlands where it is assembled, tested, then disassembled. Then it is shipped to the buyer, which requires 3 Boeing Planes and 20 Trucks for the one EUV lithography machine.

With such a crucial role, it is no surprise that governments everywhere have been pressuring ASML into certain restrictions in terms of customers. Both ASML and the Dutch government have sided with the US, citing concerns over military use as the reason for the swift cessation of semiconductor-related exports. It does not sell its most advanced equipment to China, but had been selling the nation older "deep ultraviolet" (DUV) machines. Though following new policies by the Dutch government, they will now need to apply for a license to export DUV machines.[18] This is also technically the case for exporting EUV machines as well, but it has not received a license to export those to China in years, and if the DUV licenses are at all similar, it can be predicted that no Dutch lithography machines will be entering China in the next few years.

As a reaction to the actions taken internationally against them, the Chinese Communist Party has begun a process of increasing self-reliance in the technology sector. Though this was

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[17]Tarasov, Katie. "ASML Is the Only Company Making the $200 Million Machines Needed to Print Every
Advanced Microchip. Here's an inside Look." *CNBC*, 24 Mar. 2022,
www.cnbc.com/2022/03/23/inside-asml-the-company-advanced-chipmakers-use-for-euv-lithography.html.

[18]Chapman, Alice. "Netherlands Joins the Microchip War: Is Cutting China off a Smart Move?" *Impakter*, 16 Mar.
2023, impakter.com/netherlands-join-microchip-war-is-cutting-china-off-a-smart-move/.

always their intention, it began as a project which incorporated both western technology and experts in the construction of semiconductor factories for the Yangtze Memory Technologies Corporation (YMTC), but now they have neither. Rather than letting this slow down their development of the industry, it may have accelerated it. A large pool of state funds (~$143 billion) were injected into Chinese microchip production.[19] Many state-backed companies have begun pledging to, in the near future, use 100% locally sourced chips. Though currently, not nearly enough chips are produced for that to be realistic, and those chips are not up to the industry standard. Even though this movement started as a response to the American and Dutch policies, it can't move on without what the Dutch took away from them. This is the case no matter how many state funds or subsidies they toss at Hua Hong Semiconductor or Semiconductor Manufacturing International Corporation.[20] On the other hand, some Chinese officials claim that the sanctions and export controls against them allow them to develop, as more Chinese companies will be forced to use higher price, lower quality local chips due to a lack of access to foreign ones.

V.   Guiding Questions

1. What actions could be taken by China and the east in order to ensure military usage of semiconductors is regulated in order to resume trade?

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[19] Person, and Julie Zhu. "Exclusive: China Readying $143 Billion Package for Its Chip Firms in Face of U.S. Curbs." *Reuters*, 14 Dec. 2022, www.reuters.com/technology/china-plans-over-143-bln-push-boost-domestic-chips-compete-with-us-sources-2022-12-13/.

[20] Che, Chang, and John Liu. "'De-Americanize': How China Is Remaking Its Chip Business." *The New York Times*, 11 May 2023, www.nytimes.com/2023/05/11/technology/china-us-chip-controls.html.

2. What can be done to lower tensions in the Indo-Pacific region through microchip policy and UN action?

3. How can the world avoid future chip shortages and maintain production through the Russo-Ukrainian War?

4. What can the UN do to prioritize and incentivize civilian use of advanced semiconductors and artificial intelligence chips?

5. Should the production process be decongested to allow for easier global access to microchips and to prevent the west's ability to block off regions from modern technology?

6. Should any international action be taken to diversify certain aspects of the supply chain to ensure its safety?

7. What action could be taken to protect the ability for technological development during the artificial intelligence and digital revolution in underdeveloped countries or nations without stake in the supply chain?

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　　The New York Times, 4 July 2021,

　　www.nytimes.com/2021/07/04/technology/tech-cold-war-chips.html.

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　　Citizenship and Job." *Https://Www.Outlookindia.Com/*, 15 Oct. 2022,

　　www.outlookindia.com/international/explained-how-americans-in-chinese-tech-firms-mi

　　ght-have-to-choose-between-us-citizenship-and-job-news-230218.

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Topic B: Intrusion of Artificial Intelligence in Governmental Security

I.   **Background**

The evolution of technology in our rapidly advancing world has led to many issues with personal privacy and security. These issues are now being observed on a governmental level. As artificial intelligence continues to progress in capability and sophistication, concern surrounding the intersection of this technology with national security has been seen as a continually advancing threat. Artificial intelligence has capabilities with the potential to revolutionize the operation of government agencies, especially those concerned with maintaining protection of sensitive information and ensuring national security. AI-powered intrusion of governmental security is a multifaceted topic, as the implications have a wide range, from manipulating data via computer hacking to potentially influencing elections or decision-making processes. Given the rapidly evolving nature of artificial intelligence, intrusion of this technology could result in vast issues that reach beyond small digital security breaches, but rather encompass aspects of governmental operation such as national defense systems, medical infrastructure, and citizen privacy, all of which could lead to erosion of public trust of the government. Governments have been attempting to stay ahead of AI prevalence in both physical and cyber domains by developing defense strategies, stimulating collaboration between governments, and enhancing cybersecurity capabilities.

Artificial intelligence began as a theoretical concept in the mid-20th century, and has rapidly evolved since then. The first artificial intelligence program is widely regarded across the scientific community as The Logic Theorist,[21] which was a program designed to solve

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[21]Anyoha, Rockwell. "The History of Artificial Intelligence." *Science in the News*, 23 Apr. 2020, sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/.

logic-based mathematical problems. While the creation of this artificial intelligence acted as a

catalyst for the development of the technology, a standard for development was never created. [22]

Although the technology initially began with this reasoning technology, it has rapidly gained

momentum, and now has capabilities that involve facial and image recognition, language

comprehension, and speech processing and synthesis. Furthermore, data analytics have

converged with artificial intelligence, allowing for AI models to become even more sophisticated

as they process vast amounts of data and information. As this new development evolves, ethical

considerations and maintaining control over its progression have begun to be introduced as a

concerning issue, especially as artificial intelligence is introduced into many new sectors and

industries, such as healthcare, transportation, entertainment, and financial services, all diverse

domains that directly influence the daily lives of many[23]. For instance, the management of

healthcare systems has been transformed due to the adoption of predictive analytics, which assist

with evidence-based policy-making, management of medication distribution, and disease

management.[24]

One primary domain of concern within the realm of artificial intelligence application is

governmental operation. Many governments within the international community have started to

utilize artificial intelligence as a powerful tool for public safety and security, resource allocation,

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[22] Augustyn, Adam. "Logic Theorist: Modern Implications." *Encyclopædia Britannica*, www.britannica.com/technology/Logic-Theorist. Accessed 22 June 2023.

[23]Hoadley, Daniel S. "Artificial Intelligence and National Security - A51 | Security | Privacy." *Artificial Intelligence and National Security*, 28 Apr. 2018, a51.nl/sites/default/files/pdf/R45178.pdf.

[24]Davenport, Thomas, and Ravi Kalakota. "The Potential for Artificial Intelligence in Healthcare." *Future Healthcare Journal*, June 2019, www.ncbi.nlm.nih.gov/pmc/articles/PMC6616181/.

data analysis, and efficiency enhancement. Artificial intelligence has the ability to analyze data from multiple sources, including sensor networks, social media, and surveillance cameras, all of which can be used to detect potential threats and mitigate risk for civilians, but this process and capability simultaneously poses the risk of this data being leaked, creating security breaches of sensitive information. This technology has also already been integrated into administrative processes, with virtual chatbots and assistance becoming progressively more utilized, as well as routine tasks such as document processing becoming automated and streamlined.[25] However, as this implementation of AI often deals with information such as facial recognition and private data, this adoption raises concerns about the consideration of ethical issues in regards to data security, transparency, and algorithm bias.[26] It is essential for the future of public welfare that governments are able to find and maintain a balanced use for artificial intelligence that harnesses its beneficial potential, while still protecting civil liberties and upholding public trust.

Another aspect of artificial intelligence intrusion in governmental operations is collaboration and standardization across the international community. The presence of artificial intelligence in the cyber realm presents a unique and critical challenge, as the reach of this technology is not restrained by any physical barriers, and is thus applicable transnationally. Minimal guidelines for the regulation of AI use have been created,[27] though international

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[25]"The Future of Artificial Intelligence (AI) in Government." *Intel*, www.intel.com/content/www/us/en/government/artificial-intelligence.html. Accessed 22 June 2023.

[26] Boutin, Chad. "There's More to AI Bias than Biased Data, NIST Report Highlights." *NIST*, 16 Mar. 2022, www.nist.gov/news-events/news/2022/03/theres-more-ai-bias-biased-data-nist-report-highlights.

[27] Engler, Alex. "The EU AI Act Will Have an Inaugural Global Impact." *Brookings*, 2 Dec. 2022, www.brookings.edu/research/the-eu-ai-act-will-have-global-impact-but-a-limited-brussels-effect/.

cooperation surrounding best practices and harmonization of management have the potential to aid in risk mitigation while promoting accountability. Recognizing the global implications of artificial intelligence, it is vital that governments adapt to the briskly advancing nature of the technology, and prioritize governmental and private security across the international community, as well as domestically.

II.   United Nations Involvement

The United Nations has recognized the potentially transformative capabilities of artificial intelligence, and has been at the forefront of facilitating international discussion surrounding ethical policy on the situation. One of these vital contributions has been the development of an inaugural global agreement on the ethics of artificial intelligence development[28], as created under the United Nations Educational, Scientific and Cultural Organization (UNESCO). As the progression of artificial intelligence is an extremely contemporary issue, United Nations involvement on this topic has primarily surrounded the support of responsible and transparent development, but has yet to create binding international laws or regulations for the technology. However, it has acted as a central advocate for the alignment of AI development with human rights standards, promoting accountability and transparency within the sectors of both governmental and private use.[29]

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[28] "193 Countries Adopt First-Ever Global Agreement on the Ethics of Artificial Intelligence | UN News." *United Nations*, news.un.org/en/story/2021/11/1106612. Accessed 22 June 2023.

[29] "Urgent Action Needed over Artificial Intelligence Risks to Human Rights | UN News." *United Nations*, news.un.org/en/story/2021/09/1099972. Accessed 22 June 2023.

Another application of artificial intelligence that the UN has encouraged is that of the technological application to the Sustainable Development Goals, which are seventeen interlinked objectives created by the UN to foster international cooperation for development. Application of AI has been promoted in the fields of agriculture, healthcare, education, and climate change mitigation via improvements such as risk assessment, communication, and innovative strategy creation.[30] While these efforts have shaped responsible deployment, international discussion and collaboration, and have made progress towards global governance and regulation, this technology has been introduced so recently that true UN impact has not been utilized to its fullest potential.

III.   **Topics to Consider**

A. **Military Application**

One of the most controversial uses of artificial intelligence is in military operations and equipment. In cases when weapons can make decisions by themselves, the system is more prone to error or it allows for large scale assumptions to be made. One such case of this is in anti-terror and drone technology. Beyond just the use of spying technology to track suspected terrorists or insurrectionists, this same technology can be used to carry out drone strikes without any human input. Through a missed call or other unassuming methods, a cell phone can be infected by malware that only requires access to functions such as voice calling, and does not require user intervention. From there, they can be automatically tracked and attacks can be carried out

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[30] "Towards an Ethics of Artificial Intelligence." *United Nations*, www.un.org/en/chronicle/article/towards-ethics-artificial-intelligence#:~:text=AI%20could%20open%20up%20 tremendous,planning%20and%20father%20 knowledge%20sharing. Accessed 22 June 2023.

anywhere, and they can be done automatically through the meta-data of phone calls and GPS targeting. These "signature strikes" have been reported and alleged against the US in areas including Yemen.[31] The families and nations of victims of these types of attacks are left without answers as to even the motivation behind them, and it is not uncommon in drone strikes for surrounding civilians to be caught in the crossfire. The alleged aggressor nations in these attacks are not even sure if they've been successful in preventing any terrorism, as it is based on suspicious patterns of behavior which now is analyzed strictly by artificial intelligence. Autonomous, "fire and forget", drones currently circle over volatile nations like Libya.[32]

B. Global Access to AI

It's no secret that artificial intelligence capabilities will be the main factor in improving global influence through military and civilian/domestic use in the future, and some nations might be left behind in this second coming of the digital revolution. A massive digital divide already exists between developed and developing nations, so the newer prevalence of artificial intelligence may not seem likely to shift the current balance in either direction. Either way, it still remains important to factor in how the use of this technology will factor into international relations and the world stage. Especially when artificial intelligence has presented itself to be the biggest separator between world players and superpowers since the nuclear bomb. If the technology continues to be centered within areas with easier access to AI chips and the digital

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[31] Greenfield, Danya. *Do Drone Strikes in Yemen Undermine US Security Objectives?*, www.files.ethz.ch/isn/184589/Drone_Strikes_in_Yemen.pdf. Accessed 23 June 2023.

[32] Hernandez, Joe. "A Military Drone with a Mind of Its Own Was Used in Combat, U.N. Says." *NPR*, 1 June 2021, www.npr.org/2021/06/01/1002196245/a-u-n-report-suggests-libya-saw-the-first-battlefield-killing-by-an-autonomous-d.

world, it could drive tensions up, wages down, and leave lesser developed countries behind with less influence than they may have had to start with.

C. Data Privacy and Human Rights

Undoubtedly, the largest use and the use of AI that will affect the most people is its use in monitoring civilian behavior and analyzing data. This does not only come in predictable forms, but infringements on assembly in the form of facial recognition software and the mounds of data used to train and develop AI. Facial recognition has been used to punish participants of peaceful protest in India, Hong Kong, the US, and Russia. Respectively, protests against the Hong Kong extradition bill, against India's Citizenship Amendment Act, supporting the American Black Lives Matter movement, and supporting Alekxei Navalny (Russian lawyer) have been identified and punished while peacefully protesting using facial recognition. AI is being used to surveil people through their phones, as it has been used in China to arrest alleged insurrectionists on their way to a poetry reading. Vietnam has used AI to monitor and take down certain facebook pages. It can also autonomously listen to voices through mobile devices, and in real-time translate those voices and detect suspicious behavior. A Chinese tech firm, iFlytek has developed this technology and used it to assist the Chinese government in its persecution and alleged genocide against the Uyghurs. While these issues are extremely prevalent in regards to the ongoing implications of this problem, the ethical issues of AI remain its largest controversy, and in the hands of the government, civilians may feel their rights have been violated.

D. AI System Biases

The factor that affects every facet of AI usage in government and security is bias. Based on the data set used to train AI, it will inevitably develop certain biases which must be mitigated or avoided by prohibiting certain uses of the technology. Pertaining to voice recognition and monitoring, text-to-speech services have about a 19% error when listening to white speakers, versus a 35% error when used on black speakers.[33] Certain AI algorithms have been tested in policing and pretrial release decisions to prevent inequality in bail systems and have been shown to display the same inequality and bias it was being used to prevent. These "risk assessments" can consider prior convictions without context or a knowledge that (for example) a predatory plea bargain was signed due to an inability to pay cash bail. If use of AI services becomes common in public institutions and government programs, there remains a fear that it will only exacerbate existing inequality due to training biases or societal ones.

E. Development and the Future of AI

It is generally agreed that the best way to treat AI is as an opportunity to augment and improve human ability rather than replace it, both to preserve the global economy and the human condition. However, it is also agreed that decision making must not be entirely dedicated to and entrusted within the hands of AI. Plans and actions must be taken to correct any deviation from what is deemed the best development and implementation process for AI. Due to biases and risks, human brains must retain a large portion of processes and actions taken within government to allow for a continually developing, adapting, and just society. It's important to consider that

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[33] *The Impact of Artificial Intelligence Technologies on the Right To ...*,
www.ohchr.org/sites/default/files/Documents/Issues/DigitalAge/Submissions/CSOs/ICNL.pdf. Accessed 23 June 2023.

use of AI may be best avoided in sectors where they are prone to bias and error or where they are unnecessary. The future of development for AI should also be monitored, as it is more difficult to regulate readily available technology rather than the development of that technology so it can be used to its potential, but safely.

IV. Case Study: Chinese Facial Recognition and Suppression of Political Dissent Using AI

In AI's short history, autocratic and authoritarian regimes have shown themselves to be most determined to put its applications to the test in terms of domestic and national security. The use cases of AI in this sector lends itself to parties which may be less concerned with maintaining the rights of their citizens and are more concerned with crushing political dissent. Whereas typically, state-controlled economies and societies typically trail behind their democratic and capitalist counterparts in innovation and technology, this has shown not to be universally the case when it comes to AI. Additionally, AI development companies with contracts with the government can gain access to citizen's collected data to use in this AI, allowing for faster, more efficient, and more accurate development. These factors have allowed China to soar to the top of AI development in certain applications which are most useful to the CCP.

Currently, the 5 leading AI facial recognition companies are all Chinese.[34] This is the main area where China leads in AI development and it is continuing to work to increase its

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[34] DeSmith, Christy. "Why China Has an Edge on Artificial Intelligence." *Harvard Gazette*, 19 Mar. 2023, news.harvard.edu/gazette/story/2023/03/why-china-has-an-edge-on-artificial-intelligence/.

surveillance capabilities. New technology is working to increase the efficiency and automation of existing systems with "One Person, One File" technology. It not only automates more of the filing and organization process, but also is better at detecting blocked, masked, or low-resolution faces. It will create massive quantities of people's data and will automatically update complex profiles for individuals and software collects and sifts through data. China works on its AI development under the guise of preventing crime and the spread of COVID-19, but Beijing has been shown to use the tech to suppress peaceful protests and persecute certain ethnic groups, such as the Uyghur Muslims.[35] There are also currently about twenty two Chinese tech companies that offer facial recognition and monitoring services or software. The most CCP-affiliated of which (namely Huawei) have been accused of working with their government to suppress ethnic groups and dissent, and have refuted those notions and accusations. Current systems work off of a network of "sharp eye" surveillance systems established in more urban districts in the late 2010s.

Since the accession of Xi Jinping into his autocratic role, China has regressed back into its role as one of the most oppressive large-scale and geopolitically vital nations in the world. The current Chinese Communist Party (CCP) administration has been seeking out new ways to centralize complete control of their society, as seen especially through actions taken in response to COVID. This desire for control has had an equal and opposite reaction in public opinion, who now desire further freedoms. This will lead the government to taking more radical actions in maintaining stability and preventing terrorism, as Beijing puts it. Power has been only further

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[35] Person, and Eduardo Baptista. "China Uses AI Software to Improve Its Surveillance Capabilities." *Reuters*, 8 Apr. 2022, www.reuters.com/world/china/china-uses-ai-software-improve-its-surveillance-capabilities-2022-04-08/.

centralized with new actions being allowed in 2018 constitutional reforms and responses to terrorist attacks and riots in Xinjiang. The surveillance and control that Beijing has over Xinjiang dwarfs that of even Shang-hai, which was tossed into the international spotlight following massive quarantines. New grid-management systems and capillary territorial surveillance seeks to entirely suppress the Uyghurs and prevent riots or dissent.

The trade-off between privacy and stability has been one which has stumped the world since governments have had the ability to encroach on this privacy. Especially following events like 9/11, the US government and public had to tackle both ethical and practical questions concerning breaches of their own privacy and targeting of ethnic groups considered more likely to commit terrorism against the US. It is also an issue which will only become more prevalent as governments' capacity to gather information on its citizens grows. China has attempted to get ahead of some of these governance issues with some internal regulation from a couple different leading bodies. The Cyberspace Administration of China (CAC) has released and proposed many rules for transparency in online recommendation algorithms, such as the ones used on TikTok.[36] The China Academy of Information and Communications Technology (CAICT) has also proposed rules, mostly pertaining to bias and error in AI systems.[37] CAICT has been working to certify facial recognition systems to ensure trustworthiness. While the Chinese government retains large control over many of these institutions and is unlikely to follow regulations or

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[36] "Translation: Internet Information Service Algorithmic Recommendation Management Provisions (Draft for Comment) – Aug. 2021." *DigiChina*, 31 Oct. 2021, digichina.stanford.edu/work/translation-internet-information-service-algorithmic-recommendation-management-provisions-opinon-seeking-draft/.

[37] "White Paper on Trustworthy Artificial Intelligence." *Center for Security and Emerging Technology*, 14 Sept. 2021, cset.georgetown.edu/publication/white-paper-on-trustworthy-artificial-intelligence/.

recommendations, steps taken in initial governance of AI in China are important to recognize and build on top of. Eventually, international action could be taken to cement many of these rules and ensure compliance within regions where the best practices of AI are not being followed.

V.   **Guiding Questions**

A. How can public interest and the right to privacy be balanced in a way that is most beneficial for citizens and global interest?

B. Should actions be taken to ensure compliance with international regulation in relation to AI application for the military and should new regulations be put in place?

C. Should there be an international standard for the regulation of artificial intelligence, and how would this best be implemented?

D. How can transparency within the government be prioritized to ensure that civilians maintain privacy?

E. How can legislation pertaining to artificial intelligence keep pace with the constantly evolving nature of the technology?

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ld%20open%20up%20tremendous,planning%20and%20faster%20knowledge%20sharing
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