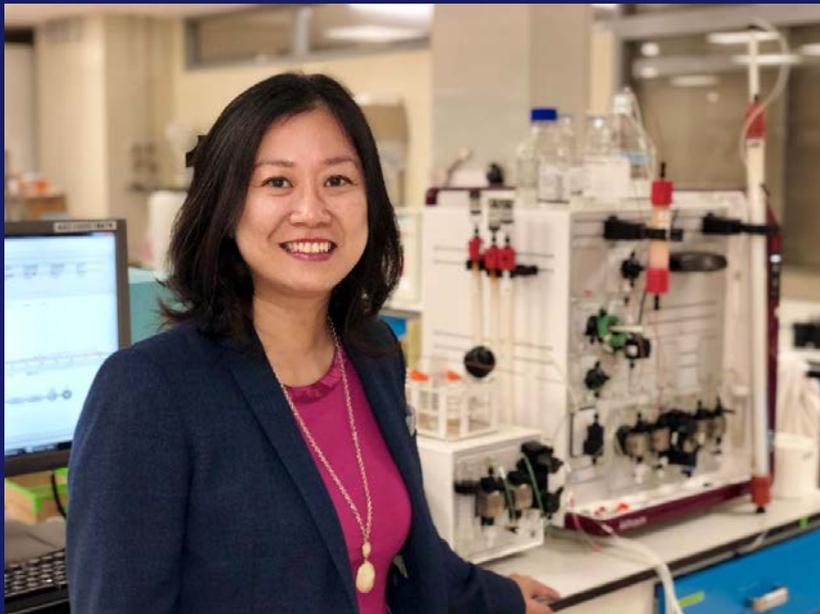


NISTH Newsletter

Issue 4: Sept 2020

NISTH Fellow, Associate Professor Sierin LIM, makes the Singapore '100 Women in Tech' List



NISTH Fellow, Associate Dean (Global Partnerships) Graduate College and the Associate Professor of Bioengineering at the School of Chemical and Biomedical Engineering, **Dr Sierin Lim** named in the inaugural Singapore 100 Women in Tech list for her significant contributions to the tech sector here in Singapore. Her initiative has helped to pave the way to a diverse and inclusive tech sector.

Dr Lim's initiative focuses on promoting science, technology, engineering, and mathematics (STEM) to female students and retaining female STEM talent. With the Promotion of Women in Engineering, Research and Science (POWERS), she hopes to gather data to identify the motivations and challenges faced by women in STEM. She aims to work with the community and other organisations to create a supportive STEM ecosystem. Her vision is to have women students, researchers, scientists and professionals shine and create an impact on the communities and the organisations they serve.

Dr Lim won the 2013 L'Oréal Singapore for Women in Science National Fellowship, in recognition of her work in the design, engineering and development of hybrid nano/micro-scale devices from biological parts by utilizing protein engineering as a tool. It was then, that she realised that there were not many women in STEM. On acknowledging the fellowship, Dr Lim said, "Using my career as an example, I hope to inspire curiosity and foster grit in young women to be future scientists; I'd like to engage more women to advance science and engineering."

She became involved in projects that promoted women in science. In 2018, Dr. Lim and Dr Kimberly Kline co-founded Women@NTU Initiatives, a culmination of efforts started by the Women in Engineering, Science, and Technology group. Previously, there were no concerted efforts to bring awareness and promote women roles particularly in STEM. The initiative aimed to advance women's roles in academia, industry and society, as more people recognized that gender balance improves performance not only in academia but also in business. In 2019, Dr. Lim also organized the first all-ladies hackathon in collaboration with Xilinx and Garage@EEE.

This led her to co-start POWERS. Her keen efforts have been recognized by the Ministry of Education through a grant on STEM & Innovation & Enterprise (SIE) Promotion Funding Initiative in 2020. The funding of the proposal, titled "POWERS: The Promotion of Women in Engineering, Research, and Science", will provide a three-year operating budget for various initiatives, including leadership trainings, mentorships and symposiums, as well as community outreach and engagement programs and science educator programs.

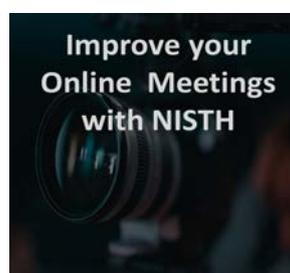
NISTH congratulates and encourages, Dr Sierin Lim in her efforts to promote and inspire young women to take up engineering.

Top of the News:

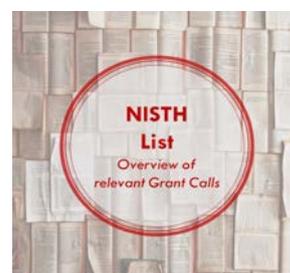
*NISTH Think-Out: Debate Series
AI & Regulation*



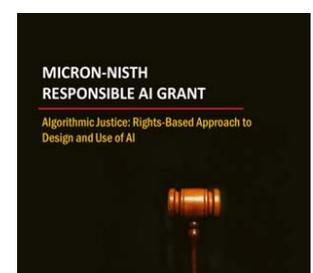
*Improve Online Meetings
with NISTH*



*NISTH List
Overview of relevant Grant Calls*



*Knowledge Sharing:
Algorithmic Justice*



NISTH Think Out: Debate Series

AI & Regulation



Deliberation is essential for the development of new knowledge. The process of unpacking the causes and consequences of an issue lead to active learning and well-thought-out decision making. NISTH seeks to provide a platform for active discussion on dual perspectives, by leading researchers from across disciplines, to explore global challenges outside the box! Join our expert speakers as they discuss and deliberate on the subject contention.

AI & Regulation:

The world of Artificial Intelligence (AI) is evolving at exponential speed. As companies and businesses begin to invest big money into AI and machine learning, governments are quickly assessing the need to put in regulations and frameworks to suit their country's principles. While some experts stress the need to regulate AI, especially in its impact on critical issues like privacy, security, human rights, crime, and finance, some argue that regulating it could hamper the development of AI to its full potential.

In this inaugural debate, we will feature two of our NISTH Societal Impact Fellows – **Associate Professor Bo An** and **Associate Professor Hannah YeeFen Lim**, who will discuss and deliberate on AI & Regulation, with a specific contention of: *Artificial intelligence systems will need to be stringently regulated by governments in order to ensure their success.*

SPEAKER BIOGRAPHY



Bo An is a President's Council Chair Associate Professor in Computer Science and Engineering, Nanyang Technological University, Singapore. He received the Ph.D degree in Computer Science from the University of Massachusetts, Amherst. His current research interests include artificial intelligence, multiagent systems, computational game theory, reinforcement learning, and optimization. His research results have been successfully applied to many domains including infrastructure security and e-commerce. He has published over 100 referred papers at AAMAS, IJCAI, AAAI, ICAPS, KDD, WWW, ICLR, NeurIPS, JAAMAS, AIJ and ACM/IEEE Transactions. Dr. An has many distinguished awards to his name, most recent one being the 2018 Nanyang Research Award (Young Investigator). He is PC Co-Chair of AAMAS'20.



Hannah YeeFen Lim, trained in computer science and law, is an internationally recognised legal expert in Technology & Internet law including the policy and regulation of AI and blockchain, Intellectual Property Law, Data Protection and Privacy Law and E-commerce law. She wrote one of the pioneering books on Internet law, *Cyberspace Law* in 2002 published by Oxford University Press and her research has been cited with approval by senior judiciary, most notably by the High Court of Australia. Her research has always critically analysed cutting edge technology from the perspectives of law, ethics and society and has shaped legal and regulatory thought and policy, especially in issues raised by digital copyright, the Internet, Online Games, cloud computing, e-commerce, cybercrime, data protection, AI, blockchain, big data, and fintech.



Singapore's migrant workers and pandemic inequalities - *Laavanya Kathiravelu*



Laavanya Kathiravelu is a NISTH Fellow and Assistant Professor at the Division of Sociology at NTU, Singapore. Her research and teaching interests lie in the intersections between migration & citizenship; urban studies, and race; ethnicity and belonging in global cities of the "global South".

As the world embarks on the "new normal" phase of the coronavirus pandemic, clearer indications are emerging, of who the winners and losers with regards to the handling of COVID-19. Singapore, by many standards, has fared very well. It reports one of the lowest number of deaths per capita from the virus despite high infection rates. However, the ways in which this global pandemic has exposed inequalities within countries has also very much marked Singapore's experience

with the virus. In this nation of 5.7 million temporary and permanent residents, almost [95% of the more than 57,000 cases of COVID-19](#) have been contracted by low waged migrant (LWM) men. Primarily from India and Bangladesh, they typically labour in the industries of construction, factory manufacturing, shipyard and are key in the maintenance of the infrastructure of the city. On temporary work visas, they are not allowed to bring families with them or access any pathway to citizenship. Tied through visas to employers and jobs, they are often housed in dormitory-like spaces, with up to 20 men sharing a room. Within these dormitories, toilets, bathrooms, cooking and recreational facilities are also communal.

Recently [published research](#) confirms that tight and dense living conditions within such dormitories increases the risk of exposure to the virus. The Singapore government has pledged to improve living conditions for these men, in particular increasing allocated space per person. However, such efforts have thus far been [implemented partially](#). Given, there are more than one million LWMs in Singapore, any such systemic change is bound to take time and new infrastructure.

Cleavages in pandemic management are most apparent in the restrictions on everyday mobility imposed on LWMs. While all residents of the nation-state were subject to a period of lockdown where movements were restricted, many LWM men have had to endure this for longer, with some not even allowed to leave their shared dormitory rooms as a tactic of containment. For those in quarantine, the additional fear of contracting the virus while away from families lead to increased emotional and mental stress. The non-payment of wages or payment of only base salaries while confined and cannot work is also a key source of stress for migrants who typically take on large debts to migrate, and whose families back home are dependent on remittances. Although many acknowledge that measures are in place to protect their health and wellbeing, the perception is that LWMs are bearing the disproportionate burden of mitigation measures.

Stringent tracking and tracing measures have been lauded as being predominant ways through which the pandemic has been brought under control. LWMs bodies, perceived as sites of disease and threat, are seen as legitimate objects of such surveillance. In order to return back to worksites and factory floors, migrant men have to install multiple mobile apps that track their movements through "check-in" features and monitor their health through mandated selfies and temperature checks. The fear of visa termination by employers means migrants have little choice but to comply. These measures, including the trace together app have, to a far lesser extent been accepted by Singaporean and middle class migrants who have expressed concerns over [issues of privacy](#) and effectiveness. Breaches in compliance by migrants are relatively more harshly dealt with.

The combination of restrictions and surveillance seem to be taking a collective emotional toll, with reports emerging in the past few months of attempted suicides in dormitories. One video of a migrant man on a ledge outside his high-rise dormitory window seemingly ready to jump, in particular raised concerns within larger civil society. It has also recently emerged that an Indian migrant who contracted COVID-19, [expressed a desire to die](#) before he was found motionless at a staircase landing after having fallen from a seventh floor window. Local NGO case workers, say however, that suicides are not unusual within this community, where access to mental health professionals is rare. Patterns of suicides in home countries as a response to economic hardship, and the pressure to maintain masculine ideals point to the cultural prevalence of suicide as a solution for this group. Migrant NGOs together with local healthcare authorities, have issued infographic text messages to migrant men via social platforms and messaging apps, advising them to reach out to their friends or helpline numbers when they feel depressed and down. However, this doesn't take into account reluctance by migrants who may have high levels of distrust of government authorities and lack of understanding of mental health issues. As the number of infections decline, and lock down measures are eased, the effects of the pandemic on the city-state's LWM population continues to reverberate. How this population is managed will have implications not just for the economic growth of the country, but its popularity as a destination for migrant labor.

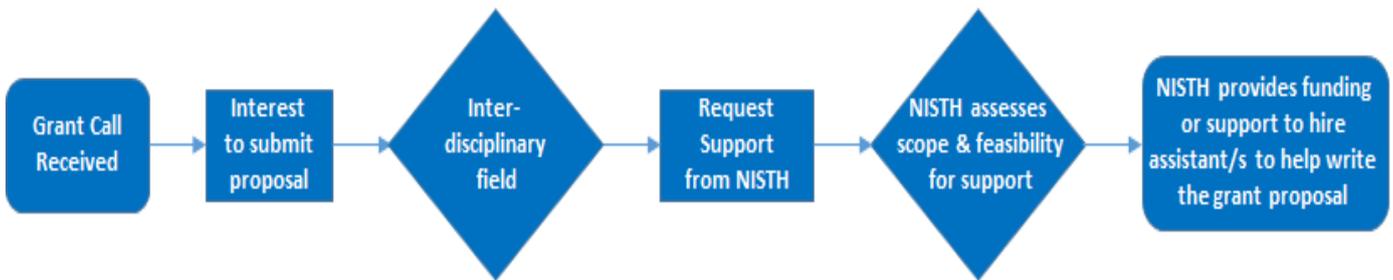


GRANT WRITING SUPPORT

If you find you are struggling with writing up that Grant Proposal - NISTH can help!

We understand how time-consuming and exhausting writing a grant proposal can be. NISTH has put aside a small amount to help our Fellows in this task. If you have an interdisciplinary grant proposal, (with PIs from STEM and non-STEM fields) that you would like to put together, do reach out to NISTH. We will assess the scope and feasibility of the proposal and provide funds or support toward hiring manpower (assistant/s) to aid in writing up the final proposal.

For More information, visit : <http://nisth.ntu.edu.sg/Research/Pages/NISTH-GWS.aspx>



DEEP TECH FOR GOOD: Partnership for the Future



SGInnovate launched **Deep Tech for Good**, a new initiative that seeks to accelerate the development and use of artificial intelligence (AI) and other frontier technologies to improve the human condition and drive sustainable development across different markets.

The initiative was launched at a virtual event with an international line-up of experts sharing their perspectives on how Deep Tech can be advanced for social and economic good. NISTH supported this event as a strategic partner, along with the United Nations Development Programme (UNDP) Global Centre for Technology, Innovation and Sustainable Development, the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and XPRIZE Foundation.

The initiative aims to convene global leaders across the public and private sectors to facilitate the sharing of knowledge and success cases where research-based innovations have helped improve lives, help build and scale Deep Tech solutions as well as catalyze collaborations amongst corporates, startups and governments. On the 30th of June 2020, the Deep Tech for Good was launched with an online event where a panel of experts shared their perspectives on how Deep Tech can be advanced for social and economic good.

The initiative continues to encourage conversations and discussions through a series of thought leadership events. The goal is to reach out to at least 10,000 individuals including startup founders, investors, corporate leaders, researchers, and government representatives in 2020.

HAPPENINGS: Get Involved!



NISTH Think Out: A Debate Series

21st October 2020; 11:00 AM – 12:00 PM (SGT)

Join us for the inaugural debate on AI & Regulation. Hear from our expert speakers, Assoc Prof Hannah Lim and Assoc Prof Bo An, as they discuss and deliberate on the subject contention: Artificial intelligence systems will need to be stringently regulated by governments in order to ensure their success.

Read more and Register at: <https://blogs.ntu.edu.sg/nisth/2020/09/11/nisth-think-out-ai-regulation/>

NISTH LIST: Overview of relevant Grant Calls

Complementing the Grant Writing Support, we are putting together a NISTH Grant List, in an effort to create a one-stop-shop platform that provides an overview of carefully collated and curated relevant grant calls (nationally and internationally). We request you to share and contribute information on calls for proposals, that you may receive. We hope to keep this List comprehensive and up-to-date, to include calls from all fields of research. It will provide an opportunity to explore and collaborate on proposals that may be of interest to you and other NISTH Fellows.



Improve your ONLINE MEETINGS with NISTH

The 'new normal' has significantly disrupted how we communicate and interact. NISTH is re-purposing one of our meeting rooms to create a space for recordings, attending AR/VR meetings and technology options to develop a 'level-up' experience for your events, by providing immersive experiences with VR headsets and controllers; multi-sensory physical interactive agents; spatial holographic experience with AR glasses and holographic tele-presence.

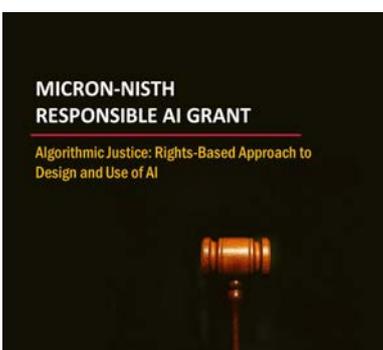
AVAILABLE SOON FOR NISTH FELLOWS!

Open Data Sharing Webinar

20 October 2020; 2:00 PM (SGT)

NISTH Fellow, Assistant Chair (Academic), School of Physical and Mathematical Sciences; Cluster Director, Energy Research Institute @ NTU, Assoc Prof **Cheong Siew Ann** will be sharing his experiences and the COVID-19 Statistics in China, in the open data sharing webinar. The event is organised by NTU and NIE Libraries in conjunction with the 13th International Open Access Week.

To Register: <http://bit.ly/NTUOA2020-Day1>



Algorithmic Justice: Rights-Based Approach to Design and Use of AI

2nd November 2020; 5:00 PM (SGT)

Prof Althaf Marsoof's team that is working on Algorithmic Justice: Rights-Based Approach to Design and Use of Artificial Intelligence under Micron-NISTH Grant is organising an online Knowledge Sharing Session. The aim is to mainly tap into the expertise of their speakers to enrich their research and also to share about their project. The invited speakers include, Prof. Karen Yeung (Uni of Birmingham), Prof Bennett Moses (Uni of NSW) and Dr Cansu Canca (AI Ethics Lab).