2024 IEEE Global Humanitarian Technology Conference (GHTC 2024)

Radnor, Pennsylvania, USA
23-26 October 2024

Additional Copies of This Publication Are Available From:

Wednesday, October 23

Wednesday, October 23 13:00 - 14:45 (America/New_York)
WKSP1: Effective AI for Social Good

Presenters:

* Ishan Shah, Research Engineer, AI group at Global Health Labs.
* Charles Delahunt, Senior Research Engineer, AI group at Global Health Labs.
Room 115
AI methods have greatly increased in power and maturity in recent years, and if applied correctly they can have tremendous impact for good in areas such as health care in low resource settings. But AI solutions, however well-intentioned, are guaranteed to fail if they are mismatched to the needs of the targeted use case. Therefore, as a necessary condition of success, we must fully understand the constraints and needs of the use case, and we must design these elements into the AI development process at every step.

In this workshop, we will describe this design process, aided by concrete examples from our work on AI for global health. Attendees will bring away core principles and specific techniques to enable design of AI for successful deployment and impact.

Wednesday, October 23 15:00 - 16:45 (America/New_York)
WKSP2: Humanitarian Engineering Education Programs

Presenters:

* Kevin Moore, Executive Director, Humanitarian Engineering Program, Colorado School of Mines
* Lin Yong, Chair, Humanitarian Engineering Minor, Miami University School of Engineering
* Brian Thomas, Senior Lecturer in Electrical and Computer Engineering, Baylor University
Room 115
This panel session and participatory workshop addresses the organization and content of Humanitarian Engineering (HE) educational programs, with the primary goal of identifying the frameworks, body of knowledge and current practices commonly found in such programs. We hope to conclude the session with some agreement on a standardized subset of knowledge that would be expected to be found in a course or program titled "Humanitarian Engineering" or similar. A second goal is to develop a network of educators in this space who can exchange ideas and best practices.

Wednesday, October 23 18:00 - 21:00 (America/New_York)
SOUK: Evening souk

Pooster sesion and welcome reception
Room: Ballroom
Designed as a universal marketplace for easy exchange of ideas and introductions to fellow conference participants, ALL ATTENDEES are urged/encouraged to arrive with material to post. We will provide the means for you to display whatever you provide-be it a "formal" poster to sheets of paper. Material posted will remain displayed for the duration of the conference to provide easy access to attendee's interests.

Everyone is encouraged to participate whether you plan your poster ahead of time, or put it together when you arrive.

Thursday, October 24

Thursday, October 24 8:00 - 8:30 (America/New_York)

THBK: Breakfast

Room: Ballroom

Thursday, October 24 8:00 - 11:00 (America/New_York)

THREG: Registration

Room: Foyer

Thursday, October 24 8:30 - 9:00 (America/New_York)

OPN: Opening Remarks

Room: Ballroom

Thursday, October 24 9:00 - 10:20 (America/New_York)

PNL1: Technology Development to Technology Implementation

Panelists:

* Andrew Lamb, Internet of Production Alliance
* Amit Bhatnagar, founder and CEO of https://accuster.com/
* Ben Savonen, Global Development Incubator

Moderators:

* John Gershenson, Director, Humanitarian Engineering and Social Entrepreneurship program, Penn State
* Toby Cumberbatch, Cooper Union
Room: Ballroom
In this kickoff keynote panel we set the stage for this conference and its theme - DOING. Three panelists, with extensive experience in engineering with communities, will give brief introductory remarks on their background and their view of the distance between technology development and technology implementation in their fields. Then, with the aid of a moderator, we will further explore challenges and opportunities in bridging development and implementation.

Thursday, October 24 10:30 - 11:50 (America/New_York)

1A: AI in Education

Room 115
Chair: Robert Caverly (Villanova University, USA)

10:30 *A Review on the Feasibility of AI-supported Education Platforms in Afghanistan: Addressing Barriers to Women and Girls' Education.....1*

Aziz Ullah Karimy (JNTUH, India); Juma Rasuli (Universidade Estadual da Paraíba, Brazil); P Chandrasekhar Reddy

(JNTUH, India); Musa Joya (University of Surrey, United Kingdom (Great Britain)); Ali Juma Hamdard (Federal University of Sao Carlos, Brazil); Hassan Rahnaward Ghulami (University of Bologna, Italy)

10:38 *Reimagining Wearables to Bolster Sustainable Development in Low-Resource Settings.....9*

Lauren K Hamamoto, Olivia M Meyer, Priya M Natarajan, Meghan G Young, Annly John and Khanjan Mehta (Lehigh University, USA)

10:46 *Mobile Virtual Reality Design for Healthcare Training in Low Resource Settings.....17*

Matthew Cook, Rachel Umoren and Sara Berkelhamer (University of Washington, USA); Chinyere Ezeaka (University of Lagos, Nigeria); Joseph Fisher (University of Washington, USA); Malik Raji (eHealth4Everyone, Nigeria); Cyril Engmann (University of Washington, USA); Ime Asangansi (eHealth4Everyone, Nigeria)

10:54 *Next-Gen Safety Training: ICT Solutions for Informal Workers in Colombia.....23*

Gregorio E Puello-Socarrás (Corporación Universitaria Minuto de Dios - UNIMINUTO, Colombia)

11:02 *Use of AI to augment multilingual content in cyberspace for development - An Indian case study.....31*

Vijayalakshmi B (Centre for Development of Advanced Computing (CDAC), India); Kondapur Aneesh Deshpande and Nishkarsh Krishan (Centre for Development of Advanced Computing, India)

1B: Climate Change Data

Room 119

10:30 *Potential geographical distribution of the Wheat Streak Mosaic Virus and its impact on food security: prediction based on modelling using climatic factors.....36*

Emmanuel Der Tambile (Amrita Vishwa Vidyapeetham & Amrita School for Sustainable Futures, India); Vilayannur Subramanian Ramachandran and Raji Pushpalatha (Amrita Vishwa Vidyapeetham, India)

10:38 *Reducing Emissions from Taxis in the Galapagos Islands using a Mobile Phone Application.....44*

Pritpal Singh (Villanova University, USA); Ryan Barnwell (VIllanova University, USA); William Purcell, Jenny Smith and Catherine Dudrear (Villanova University, USA)

10:46 *A Low-Cost Datalogging and Telemetry IoT Platform for Remote Water Monitoring and Control.....49*

James C Peyton Jones (Villanova University, USA)

10:54 *Co-Designing the Foundations of a Climate Sensitive Infectious Disease Community of Practice.....54*

Madeline De Figueiredo (University of Texas, USA); Rayya El Zein (Climate Sensitive Infectious Disease (CSID) Network, USA); Angela Okune and Miliaku Nwabueze (Code for Science & Society, USA)

11:02 *Characterize human mobility in Nigeria during flooding season and its impact in shaping the spread of Covid-19.....56*

kailun Liu, Xin Wu, Lele Zhang and chenfeng xiong (Villanova University, USA)

Thursday, October 24 11:50 - 12:10 (America/New_York)
BK1: Networking Break

Room: 1st Floor Lobby

Thursday, October 24 12:10 - 13:30 (America/New_York)

2A: Productivity Solutions in Agriculture

Room 115
Chair: Khanjan Mehta (Lehigh University, USA)

12:10 *Influence of the Red-Billed Quelea Bird on Rice Farming in the Kisumu, Kenya Region.....64*

John Gershenson (The Pennsylvania State University, USA); Alexander Aumen, Gianna Gagliardi, Colleen Kinkead, Van Nguyen and Kaylee Smith (Penn State University, USA)

12:18 *Rainwater Harvesting and Automated Off-grid Irrigation for Food and Water Security in Guatemala.....72*

Arav Sharma and Lisa Shay (The Cooper Union for the Advancement of Science and Art, USA)

12:26 *Design and Fabrication of a Semi-autonomous Tilling Machine.....80*

Jadis A Aganda, Kofi Sannie Amosah and Stephen Kofi Armah (Ashesi University, Ghana)

12:34 *Sustainable Solutions for Livelihood Enhancement in Sadivayal Village: Integrating Agriculture and Clean Energy.....87*

Tangudu Harsha Vardhan (Amrita Vishwa Vidyapeetham, India & Amrita School of computing, India); Tejaswi Potu (Amrita vishwa vidyapeetham, India & Amrita School of computing, India); B Sri Ganesh (Amrita vishwa vidhyapeetham, India & Amrita school of computing, India); Suneelvijay M and Rithika Nallaparaju (Amrita Vishwa Vidyapeetham, India & Amrita School of Engineering, India); Ilango Karuppasamy (Amrita School of Engineering, Coimbatore, India & Amrita Vishwa Vidyapeetham, India); Renjith Mohan (Amrita Vishwa Vidyapeetham, India)

12:42 *An Indoor Low-Power Hydroponics System for Urban Spaces.....95*

Xiahro Joan Tabios (University of the Philippines Diliman, Philippines); Hannah Chzarmayne Natividad (University of the Philippines, Philippines); John Richard Hizon (University of the Philippines Diliman, Philippines); Marc Rosales (University of the Philippines, Philippines); Jessica Rey and Paul Jason Co (University of the Philippines Diliman, Philippines)

2B: Information for Entrepreneurship

Room 119
Chair: Pritpal Singh (Villanova University, USA)

12:10 *An interactive framework: Understanding community desires through Participatory Video.....101*

Nikola Nizamis and Nina Trauernicht (University of Twente, The Netherlands)

12:18 *Measuring the Efficacy of a Locally Manufactured Face Shield.....109*

Frederick Kojo Chaway Acquah, Gabriel Owusu, Jeremiah Takyi, Danyuo Yiporo and Heather R Beem (Ashesi University, Ghana)

12:26 *Empowering Village Women through CVET: Identifying Challenges, Solutions, and Motivating Factors in Tamil Nadu's Coastal Seaweed Farming.....116*

Soundariya S (Amrita University, India & Center of Women Empowerment and Gender Equality, India); Jisha Mary LG (Amrita Vishwa Vidyapeetham, Amritapuri, India); Srividya Sheshadri (Center for Womens Empowerment and Gender Equality, Amrita Vishwa Vidyapeetham, Amritapuri, India); Marcia L. Mclain (University of Edinburgh, United Kingdom (Great Britain)); Amritha N (Center for Women's Empowerment and Gender Equality, Amrita Vishwa Vidyapeetham, Amritapuri, India); Bettina E. Ryf and Rao R. Bhavani (Amrita Vishwa Vidyapeetham, India)

12:34 *Network of Village Universities for Development of India's Rural Sector.....124*

    Ranjan Sen and Bulbul Sen (USA)

12:42 *Open Know-How and An Open Source Hardware Registry As a Unifying Discoverability Mechanism for Open Source Hardware Humanitarian Engineering Projects.....132*

    Robert L Read (Public Invention, USA); Christina A. Cole and Victoria Jaqua (Open Source Medical Supplies, USA); Andrew Lamb (Internet of Production Alliance, USA)

Thursday, October 24 13:40 - 14:10 (America/New_York)

THLU: Lunch

Room: Ballroom

Thursday, October 24 14:10 - 15:20 (America/New_York)

HPNL: Panel: Engineering with purpose: The New Humanitarian Technologies Approach

Moderator:

Julianna M. Pichardo, IEEE Humanitarian Activities & Sustainable Development Manager

Panelists:

* Stephanie Gillespie, EPICS in IEEE
* Sampath Veeraraghavan, IEEE Humanitarian Technologies Board (HTB), with focus on Tech4Good
* Toby Cumberbatch, IEEE Smart Village (ISV)
Room: Ballroom

Thursday, October 24 15:30 - 16:50 (America/New_York)

3A: Power Grid Solutions

Room 115
Chair: Prasanta Ghosh (Syracuse University, USA)

15:30 *Natural Language Processing Reveals Core Issues in Uganda's Power Grid: A Study of Outages from 2015-2022.....137*

    Joel Mugyenyi (Columbia University, USA); Isaac V. Kinhonhi (Electricity Regulatory Authority, USA); Vijay Modi (Columbia University School of Engineering and Applied Sciences (SEAS), USA)

15:38 *Applying social practice theory to understand user demand in rural microgrids.....143*

    Reesha Arshad and Hassan Abbas Khan (Lahore University of Management Sciences, Pakistan); Rosanna De Rosa (University of Naples Federico II, Italy); Dario Minervini and Ivano Scotti (University of Naples Federico II, Pakistan)

15:46 *Electricity Systems Design for Standalone, Minigrid, Grid-Connected Configurations with Domestic and Flexible Irrigation Loads: A Case Study in Tigray, Ethiopia.....151*

    Yuezi Wu and Terence Conlon (Columbia University, USA); Vijay Modi (Columbia University School of Engineering and Applied Sciences (SEAS), USA)

15:54 *Design, Economic, and Environmental Analysis of a Stand-alone Solar Photovoltaic System for a Tailoring Business in Burundi.....159*

    Aniekanabasi Ekanem and Pritpal Singh (Villanova University, USA)

3B: Technology for Education

Room 119
Chair: Maria Guadalupe Lopez Molina (Universidad Iberoamericana Puebla, Mexico)

15:30 *Empowering Collaboration: Insights into Teacher Collaboration in West Kenya.....167*

    Nimisha Rachel Rackow, Ashley Shea and Ji Zhang (Penn State University, USA); John Gershenson (The Pennsylvania State University, USA)

15:38 *Characterizing Teacher Struggles and Problem Solving Across Kenyan School Categories.....181*

    Aayod Kaul, Arushi Singh and George Bodenschatz (Penn State University, USA); John Gershenson (The Pennsylvania State University, USA)

15:46 *Health Science, Engineering and the Arts to Address Maternal Health Disparities: Mothers of Sierra Leone..187*

    MJ Le Vu, Olivia Hauck, Sophie Ritzler, Ellen Murray, Constance Mulligan and Sofia Rousseau (Lehigh University, USA)

15:54 *Science on Wheels: Transforming Education with Agastya's Mobile Science Labs.....189*

    Angelina A Patel and Faatiha Kalam (Lehigh University, USA); Natesh Appaya and Shrishail Dhanawade (Agastya International Foundation, India); Asha Marwaha, Jahid O Hossain, Angelina Penza, Eric R Obeysekare and Khanjan Mehta (Lehigh University, USA)

Thursday, October 24 16:50 - 17:10 (America/New_York)

BK2: Networking Break

Room: 1st Floor Lobby

Thursday, October 24 17:10 - 18:30 (America/New_York)

4A: Diet, Nutrition and Oral Health

Room 115
Chair: Milton Chen (Vsee, USA)

17:10 *A Novel, Voice-Activated Smart Home Assistant Using a Large Language Model for Nutrition Assistance...197*

    Jay Bhardwaj, Hugo Carducci, Kenneth Clark, Nicholas Kennedy, Dylan Smith, Tim Thai, Emily Francis and Ramana Reddy (West Virginia University, USA)

17:18 *Towards Low-Sodium Diets: Low-Cost, Small-Scale Approaches to Food Reformulation and Salt Substitution.....203*

    Daniel B Weir, Shane Haycock, Joseph A Menicucci, Jr. and Khanjan Mehta (Lehigh University, USA)

17:26 *Towards Low-Sodium Diets: Educational and Policy Approaches.....211*

    Ella Sokich, Asher Mendelson and Daniel B Weir (Lehigh University, USA); Umid Abdullayev (Almaty Management University, Kazakhstan); Joseph A Menicucci, Jr. and Khanjan Mehta (Lehigh University, USA)

17:34 *EasyEat: Personalized Healthy Eating Coach.....218*

Renzo DAmbrosio, Josefina Gallinal, Santiago Souto and Cristina Mayr (Universidad de Montevideo, Uruguay)

17:42 *Advancing Oral Health Equity Through Cross-Cultural Virtual Oral Health Book Clubs: A Participatory Approach with Underserved Children in Ekiti State Nigeria and Del Carmen, Philipines.....N/A*

Adekemi Adeniyan (Dentalcare Foundation & Atlantic Fellows, Nigeria); Alfredo Coro Jr (Municipality of del Carmen, Philippines)

4B: Human-Machine Interface

Room 119
Chair: Alan Mickelson (University of Colorado at Boulder, USA)

17:10 *Strengthening Last Mile Health Education Using Amazon Alexa-Enabled Devices: A Preliminary Case Study..225*

Sofia A Espinoza-Hernandez, Jahid O Hossain, Zavier R Urbaez, Eric Yang, Elif Ozturk, Aabiskar Thapa Kshetri, Rachel Platt, Eric R Obeysekare and Khanjan Mehta (Lehigh University, USA)

17:18 *Leveraging AI Face-Tracking and Gesture Recognition for Hands-Free Computing: Bridging the Gap for Users with Physical Disabilities.....232*

Michael Ruocco, Jack Duggan, Chetan Jaiswal, Brian O'Neill and Karen Majeski (Quinnipiac University, USA)

17:26 *Enhancing Child Safety and Security through Integrated Technology for Urban Areas.....240*

Aditya Narayan (Amrita Vishwa Vidyapeetham, India); Sarang KP (Amrita Vishwa Vidyapeetham, Amritapuri, India); Viswajith K, Kowshik Marimuthu, Nagarajan P M and Sundara Raman Gopalan (Amrita Vishwa Vidyapeetham, India)

17:34 *Enhancing Type 1 Diabetes Management through Machine Learning.....247*

Anav Bordia (Basis Independent Silicon Valley, USA)

17:42 *Human Rights and Ethics Guiding Human-Machine Teaming.....254*

Lubna Dajani (Allternet Ltd., USA & Allternet, USA); Angelo Ferraro (University of South Carolina, USA); Fumihiro Maruyama (National Institute of Advanced Industrial Science and Technology, Japan); Yuchang Cheng (Fujitsu Limited, Japan)

Thursday, October 24 18:50 - 22:00 (America/New_York)
BANQ: Conference Dinner

Speaker: Dr. Revi Sterling, Technical Director, Women in the Digital Ecosystem Fund (WiDEF)

Dr. Revi Sterling has worked to advance digital inclusion in both domestic and international contexts for over 25 years. She is the Technical Director for the Women in the Digital Ecosystem Fund (WiDEF), a White House initiative to close the gender and technology gap. She previously developed and ran the USAID Women Connect Challenge, another presidential program that successfully spanned three administrations.
Room: Ballroom

Friday, October 25

Friday, October 25 8:00 - 8:30 (America/New_York)

FBK: Breakfast

Room: Ballroom

Friday, October 25 8:00 - 11:00 (America/New_York)

FREG: Registration

Room: Foyer

Friday, October 25 8:30 - 10:20 (America/New_York)

FPNL: Women in Humanitarian Technology Panel

Panelists:

* Dr. Heather Beem, Professor of Engineering, Ashesi University
* Ms. Amina Abubakar, Founder and Chief Consultant, Adaptive Solutions Africa Ltd
* Ms. Sophia Haoui, Software Developer, New Sun Road

Room: Ballroom

Friday, October 25 10:30 - 11:50 (America/New_York)

5A: AI in Agriculture

Room 115
Chair: Kevin Moore (Colorado School of Mines, USA)

10:30 *Robust Estimation of Plucking Points across Seasonal Flushes in Tea with UAV Imaging.....262*
Sanket Junagade, Sanat Sarangi, Swagatam Bose Choudhury, Ruturaj Nivas Patil, Dineshkumar Singh and Srinivasu Pappula (Tata Consultancy Services, India)

10:38 *On Digital Twin for a High Yielding Soybean Variety towards Optimal Field Recommendations.....270*
Swagatam Bose Choudhury, Rushikesh Dattatraya Kulat, Ruturaj Nivas Patil, Abhishek Kumar, Sanat Sarangi and Nandan Rajpoot (Tata Consultancy Services, India); Ajay Mittal (Research, India); Dinesh Singh (TCS & TCS Research and Innovation, India); Srinivasu Pappula (Tata Consultancy Services, India)

10:46 *Effective Regional Prediction for Potato Stress Conditions Across Rabi Seasons.....278*
Rushikesh Dattatraya Kulat, Swagatam Bose Choudhury, Vidit Patil and Sanat Sarangi (Tata Consultancy Services, India); Dinesh Singh (TCS & TCS Research and Innovation, India); Srinivasu Pappula (Tata Consultancy Services, India)

10:54 *Monitoring the impacts of disruption events on agriculture through irrigation detection with remote sensing.....286*
Hasan S Siddiqui (Columbia University in the City of New York, USA); Vijay Modi (Columbia University School of Engineering and Applied Sciences (SEAS), USA)

11:02 *Non-human primate monitoring system: early alert system against crop raids for farms in Nepal.....292*
Daniil Slutskiy, Zach Jacques and Nuno Bazarian (Wentworth Institute of Technology, USA); Saurav Basnet (550

Huntington Ave & Wentworth Institute of Technology, USA); Amir Poudel (Texas A&M University, USA); Prakash Mandhart (Wentworth Institute of Technology, USA)

5B: Entrepreneurship for All

Room 119
Chair: Peter Silverberg (Consultant, USA)

10:30 *Challenges in Rural Innovation and Entrepreneurship: A Lens through Effectuation Theory.....297*

Jayshree Patnaik and Ahla Hashir (Indian Institute of Technology Hyderabad, India)

10:38 *Making on the Move: Bringing Mobile Makerspaces to Under-resourced Communities.....303*

Jahid O Hossain, Angelina Penza, Asha Marwaha, Angelina A Patel, Faatiha Kalam, Eric R Obeysekare and Khanjan Mehta (Lehigh University, USA)

10:46 *Investigating Community Engagement Practices in Short-Term Humanitarian Engineering Projects.....311*

Arooj Masood and Grace Burleson (University of Colorado Boulder, USA)

10:54 *User-Centered Design of a Seasonal Calendar App for Women: Insights from a Case Study in India.....319*

Balu M Menon (Ammachi Labs, Amrita Vishwa Vidyapeetham, Amritapuri, India); Aiswarya K Nampoothiri (Amrita Vishwa Vidyapeetham, Amritapuri, India); Festa Lovin k f (Amrita Vishwa Vidyapeetham & University Grants Commission (UGC), India); Gokul Dev B (Amrita Vishwa Vidyapeetham, Amritapuri, India); Rao R. Bhavani (Amrita Vishwa Vidyapeetham, India)

11:02 *Digital Technology and the Empowerment of Indian Women Micro-Entrepreneurs.....326*

Rimpa Pal and Bhaskar Bhowmick (Indian Institute of Technology, Kharagpur, India)

Friday, October 25 11:50 - 12:10 (America/New_York)

BK3: Networking Break

Room: 1st Floor Lobby

Friday, October 25 12:10 - 13:30 (America/New_York)

6A: Technology for Community Well Being

Room 115
Chair: Heather R Beem (Ashesi University, Ghana)

12:10 *Training of Rural Women to Monitor the Water Quality at the Point of Use to Increase WASH Empowerment in Rural India.....332*

Reshma Ramesh (Amrita Vishwa Vidyapeetham, India); Sithara GS, Geethu S Gireesh, Reshma R Nair and Athul Ajay (Amrita Vishwa Vidyapeetham, Amritapuri, India); J. Sophie von Lieres (Amrita Vishwa Vidyapeetham, India); Bhavani R Rao (AMRITA VISHWA VIDYA PEETHAM, India)

12:18 *Viability of Applying Large Language Models to Indoor Climate Sensor and Health Data for Scientific Discovery.....340*

Aidan Chen (VSee, USA & Aidans Tech LLC, USA); Jonathan Du and Aaron Rodriguez (VSee, USA); Ryan Rodriguez (Georgia Institute of Technology, USA); Jack Higgins (IEEE Smart Village, USA); Robin Podmore (IncSys, USA); Ryan Liu and Emin Ilao (VSee, USA); Sam Daniel C Degilla and James Brian Bibiano (VSee, Philippines); Candice Chan (University of California, Davis, USA); Annalicia Pickering (Stanford, USA); Mary Showstark (Yale, USA); Jarone Lee

(Harvard, USA); Milton Chen (Vsee, USA)

12:26 *Enabling socio-ecological linkages for Rural River Restoration through Human-Nature Connection.....348*

Rondine C Twist, Esq. (Amrita University, India); J. Sophie von Lieres (Amrita Vishwa Vidyapeetham, India); Sneha Anil, Arya M V and Krishna G S (Amrita Vishwa Vidyapeetham, Amritapuri, India); Bhavani R Rao (AMRITA VISHWA VIDYA PEETHAM, India)

12:34 *Does a Standards-First Infrastructure Design Neglect Community Context.....356*

Emily Lawson-Bulten (University of Illinois at Urbana-Champaign, USA); Ann-Perry Witmer (University of Illinois Urbana-Champaign & University of Illinois at Urbana-Champaign, USA)

12:42 *Enablers and Barriers to Improved Drinking Water Sources and Safe Water Practices in Rural India.....358*

Reshma Ramesh (Amrita Vishwa Vidyapeetham, India); Sithara GS, Reshma R Nair, Geethu S Gireesh and Athul Ajay (Amrita Vishwa Vidyapeetham, Amritapuri, India); J. Sophie von Lieres (Amrita Vishwa Vidyapeetham, India)

6B: The Economics of Sustainability

Room 119

12:10 *Operational and Financial Analysis of Smallholder Rice Farming in Kisumu, Kenya.....364*

Alexander Aumen, Gianna Gagliardi, Colleen Kinkead, Van Nguyen and Kaylee Smith (Penn State University, USA); John Gershenson (The Pennsylvania State University, USA)

12:18 *Examining Income and Cost Dynamics of Motorcycle Taxi Drivers in Western Kenya.....371*

Purva Gupta and Lauren Wagner (Penn State University, USA); Dorcas Owinoh (Lake Hub Foundation, Kenya); John Gershenson (The Pennsylvania State University, USA)

12:26 *Single-Use Plastics: The Life and Afterlife of Sachets in the Philippines.....378*

Evan J Woodward, Fernanda Sena, Jackson Kramp, Sophia Lin, Avery Nudell-Cook, Eric R Obeysekare and Khanjan Mehta (Lehigh University, USA)

12:34 *Bridging the Digital Divide with Sustainability: Reuse of Landfill-bound Computers in Education.....386*

Yong Lin, Jake Mastrofski and Dylan Fall (Miami University, USA); Astin Lin, Chengyao Wu, Tariq Zaman, Charles Noah Lin and Ming Chen (Awakening Your Child Total Potential, USA)

12:42 *Implementation and Evaluation of LLM-Based Conversational Systems on a Low-Cost Device.....392*

Koga Sakai, Yuji Uehara and Shigeru Kashihara (Osaka Institute of Technology, Japan)

Friday, October 25 13:40 - 14:10 (America/New_York)

FLU: Lunch

Room: Ballroom

Friday, October 25 14:10 - 15:20 (America/New_York)

PLEN: Keynote: Avner Mizrahi, engageSPARK

"Robocalls" is a dirty word - but should it be? A deep dive into Robocalls for Research and Impact in Low- and Middle-Income Countries

Room: Ballroom

Friday, October 25 15:30 - 16:50 (America/New_York)

7A: Technology Development

Room 115
Chair: Brian Thomas (Baylor University, USA)

15:30 *Implementation of an Open Hardware and Web Platform for Citizen Science Air Quality Monitoring.....400*

Joize Barbie E dela Cruz, Ryan Jonathan Blanco, Ira Nicole J Santos and Jaybie A de Guzman (University of the Philippines Diliman, Philippines); Marc Rosales (University of the Philippines, Philippines); Paul Jason Co, John Richard Hizon, John Jairus D.P. Eslit and Percival Magpantay (University of the Philippines Diliman, Philippines)

15:38 *Real Time Air Quality Sensor System for E-Trikes.....406*

Martina Meg Bayani, Erin Julianne Mariano and Sanroe Estabillo (University of the Philippines Diliman, Philippines); Rylee Abiño (University of the Philippines, Diliman, Philippines); Anna Margarita Chua (University of the Philippines Diliman, Philippines); Aaron Tolentino (University of the Philippines, Diliman, Philippines); Miguel Carlos M Menguito (University of the Philippines - Diliman, Philippines); Paul Jason Co and Jaybie A de Guzman (University of the Philippines Diliman, Philippines); Marc Rosales (University of the Philippines, Philippines); John Richard Hizon (University of the Philippines Diliman, Philippines)

15:46 *Assessing Household Cooking Energy Behavior and Potential for Transition to E-Cooking in Informal Urban Settlements.....412*

Vongaishe Mutatu (Columbia University, United States of America); Vijay Modi (Columbia University School of Engineering and Applied Sciences (SEAS), USA); June Lukuyu (University of Washington, USA)

15:54 *Generator efficiency testing: gasoline vs. propane in the Haitian context.....414*

Brian Thomas, Daniel Chang, Ashton McCutcheon, Claudia Oggs and Jacob Webb (Baylor University, USA)

16:02 *Exploring Internet Use for Development in Mozambique.....N/A*

Nkeshimana Henry Cedrick (Universidade Eduardo Mondlane, Mozambique); Nepeti Nicanor (CEEG, Mozambique)

7B: Emergency Response Technologies

Room 119
Chair: Neil H Wasserman (George Washington University & Timewave Analytics, LLC, USA)

15:30 *The development of a drone capable of transporting humanitarian aid during an emergency.....416*

Mohamed zied Chaari (Qatar University, Qatar); Gilroy Philbert Pereira (Qatar Scientific Club, Qatar); Fawwad Daroge and Mohamed Abdelfatah (QSC, Qatar); Otman Aghzout (Abdelmalek Essaadi, Morocco)

15:38 *Chemonics support to Pakistan during the Covid-19 and 2022 flood response led to optimized health systems.....422*

Wayne Lifshitz (Chemonics Inc., USA); M Tariq (Chemonics, USA)

15:46 *Evaluating the spatial-temporal impact of urban flooding on mobility patterns and point of interest.....424*

Lele Zhang, Xin Wu, kailun Liu and chenfeng xiong (Villanova University, USA)

15:54 *On the Feasibility of Digital VHF Communications in Crisis Scenarios.....431*

Michi Hermann (Technical University of Darmstadt, Germany); Bastian Bloessl (TU Darmstadt, Germany)

16:02 *Geospatial Analysis to Target Vulnerable Population for Direct Cash Transfer Programs.....N/A*

    Tanvir S Mangat (GiveDirectly, USA)

Friday, October 25 16:50 - 17:10 (America/New_York)

BK4: Networking Break

Room: 1st Floor Lobby

Friday, October 25 17:10 - 18:30 (America/New_York)

8A: Technology for Well Being

Room 115
Chair: James C Peyton Jones (Villanova University, USA)

17:10 *Leveraging Technology for Equitable Access to Social Benefits: A Case Study of Civil Society Organization Interventions among Internal Seasonal Migrant Workers in India.....439*

    Alyssia Sanchez, Sami El Sabri, Noah Khan, Alazne Qaisar and Joseph Wong (University of Toronto & The Reach Alliance, Canada)

17:18 *Online Guided Integrated Amrita Meditation (IAM®) to Improve Mental Well-Being and Reduce Perceived Stress During COVID-19 in India.....446*

    Bavani Mohan (Amrita Vishwa Vidyapeetham, Amritapuri, India); J. Sophie von Lieres and Sowndaram C S (Amrita Vishwa Vidyapeetham, India); Rajiv Prasad (Amrita Vishwa Vidyapeetham University & Amrita School of Business, India)

17:26 *Integrated Amrita Meditation (IAM®): Towards Sustainable Rehabilitation in Prisons Using Digital Mental Well-Being Intervention.....454*

    Bavani Mohan (Amrita Vishwa Vidyapeetham, Amritapuri, India); J. Sophie von Lieres and Sundara Raman Gopalan (Amrita Vishwa Vidyapeetham, India); Rajiv Prasad (Amrita Vishwa Vidyapeetham University & Amrita School of Business, India)

17:34 *An Intelligent Computer Vision System for Gesture Based Home Automation and Detection of Parkinson's Tremors.....461*

    Evelyn Ding (Plano West Senior High School, USA); Xiaohu Guo (University of Texas at Dallas, USA)

17:42 *A User-Centred Interaction design: A holistic Approach.....468*

    Gibson Kimutai (University of Rwanda & Moi University, Rwanda); Anna Förster (ComNets, University of Bremen, Germany)

8B: Aid, Assistance and The Digital Divide

Room 119
Chair: Heather R Beem (Ashesi University, Ghana)

17:10 *Characteristics and Machine Learning Emulation of Heatwaves in Future Climate of New Jersey - Exploring Data From the CMIP6 Archive.....476*

    Vinay Karthik (Wardlaw Hartridge School, USA)

17:18 *Is Humanitarian Aid Funding Fair and Square? Correlating social justice to humanitarian aid utilisation...481*

    Zikambiyani Haanyika, Nina Trauernicht, Alberto Martinetti and Eric Lutters (University of Twente, The

Netherlands)

Sabrina Bradford, Emma Balevic and Grace Burleson (University of Colorado Boulder, USA)

Rannie D. Salvador, Nathaniel Joseph C Libatique and Mark Anthony Melendres (Ateneo de Manila University, Philippines); Gregory Tangonan (Ateneo Innovation Center, Philippines); Joselito Christian Paulus M. Villanueva (National University, Philippines)

Kuheli Sai and David Tipper (University of Pittsburgh, USA)

Friday, October 25 18:50 - 21:30 (America/New_York)

DIN: Dinner on own with new friends