Mayo Clinic
Artificial Intelligence Symposium

LIVESTREAMING-CT

Monday, May 17, 2021

9:00 a.m. - CT	**Registration**
9:30 a.m.	Welcome and Opening Remarks *Ajai Sehgal,* Chief Data & Analytics Officer, Mayo Clinic *Bradley Erickson, M.D., Ph.D.*, Medical Director of Artificial Intelligence, Mayo Clinic
10:00 a.m.	**Session One: The Bright Future of AI in Healthcare** Hype and Hope for AI in Healthcare *Jonathan Chen, M.D., Ph.D.,* Assistant Professor Stanford Department of Medicine Center for Biomedical Informatics Research Mayo Clinic Platform Strategy *John Halamka, M.D., MS,* President, Mayo Clinic Platform Panel discussion of speakers with *Bradley Erickson, M.D., Ph.D.*, Medical Director of AI, Mayo Clinic and *Clark Otley, M.D., CMO* Mayo Clinic Platform
11:00 a.m.	Break Virtual Posters & Sponsor Booth

Concurrent Breakout Sessions
11:15 a.m. – 12:00 p.m.

Oral Presentations

Moderator: Bradley Erickson, M.D., Ph.D.

- Automated Segmentation of Kidneys in MR Images for the Prediction of Long-Term Renal Function in Pre-operative Patients
  Adriana Gregory
- Machine-Based Screening for Specific Language Impairment
  Alan Armen
- AI-based Noise Reduction for Abdominal CT Images
  Andrew Missert, Ph.D.

11:15 a.m.

Health Information Technology Evaluation: From Meaningful Use to Meaningful Outcome
Vitaly Herasevich, M.D., Ph.D.

11:15 a.m.

Natural Language Processing for Clinical Excellence: The State of Practices, Opportunities, and Challenges with Examples in Mayo Clinic, UMN, and nference (Mayo CDAP)
Yanshan Wang, Ph.D., Tyler Wagner, Ph.D., Ajit Rajasekharan, Ph.D., Rui Zhang, Ph.D.

11:15 a.m.

Building an End-to-End Departmental AI Innovation Ecosystem

Atul Dhanorker, MS, Sana Khalid, MS, Jessica Cruz, MBA

11:15 a.m.
Object Detection: A Tutorial on Applications in Medical Imaging
Vikash Gupta, Ph.D.

12:00 p.m.	Poster Boasters *Moderator: Bradley Erickson, M.D., Ph.D.* • Natural Language Processing Based Machine Learning Model Using Cardiac MRI Reports to Identify Hypertrophic Cardiomyopathy Patients *Divaakar Siva Baala Sundaram, MS* • Decision Support for Patient Access: Optimizing Mayo Clinic's Front Door *Jordan Moore, MBA* • Generalizable Noise and Artifact Reduction Network for Whole-Body-Low-Dose CT *Nathan Huber* • Using Progressive GANs as Adversarial Autoencoders for Anomaly Detection in Digital Pathology Images *Steven Hart, Ph.D.* • Patient Perspectives about the use of Artificial Intelligence in Healthcare *Jordan Richardson*
12:30 p.m.	Lunch Virtual Posters & Sponsor Booth
1:15 p.m.	**Session Two: AI Development and Implementation in Healthcare** AI: Human Health & Safety *Andrew Moore, Ph.D.,* Google Cloud Chief AI Scientist AI Development and Implementation in Healthcare *Nancy Cooke, Ph.D.,* Professor of Human Systems Engineering, Arizona State University Panel discussion of speakers with *Mark Foley, MS*, Director of Artificial Intelligence, Center for Digital Health, Mayo Clinic and *Bradly C. Leibovich, M.D.*, Medical Director Digital Health, Mayo Clinic

Concurrent Breakout Sessions
2:15 p.m. – 3:00 p.m.

Oral Presentations
Moderator: Mark Foley

- An Autoencoder-based Aberration Detection Approach for Sentinel Syndromic Surveillance of Novel Influenza-Like Illnesses
  Andrew Wen, MS
- Use of an Artificial Intelligence Electrocardiography Algorithm to Predict Future Atrial Fibrillation in Emergency Department Patients Presenting with Palpitations
  Ann Kaminski, M.D., MS
- Application of Deep Learning-based AI-Cirrhosis-ECG (ACE) Score as a Screening and Prognostication Tool for Patients with Cirrhosis
  Joseph Ahn, M.D.

2:15 p.m. Investigator Tips to Preparing Data and Interpreting Output of Models *Kyle Eickman, Pharm.D.*	
2:15 p.m. Fully Automated Machine Learning (FAML) in MCC AI Factory *Dequan Chen*	
2:15 p.m. Conducting Clinical Studies Using Data Science & Image Processing *Balya Shukla*	
2:15 p.m. Joint Healthcare AI Session from the Top Trio *Rahul Kashyap, M.B.B.S., Piyush Mathur, M.D., Robert D. Stevens, M.D., FCCM*	
3:00 p.m.	Virtual Posters & Sponsor Booth

Tuesday, May 18, 2021

9:00 a.m.-CT	Registration
9:30 a.m.	Welcome & Opening Remarks *Mark Foley*, Director of Artificial Intelligence, Center for Digital Health, Mayo Clinic *Hongfang Liu, Ph.D*, Director of Biomedical Informatics, Center of Clinical and Translational Sciences, Mayo Clinic
10:00 a.m.	**Session Three: Privacy and Regulatory** Accelerating AI with Synthetic Data *Khaled El Emam, Ph.D.,* Professor, Faculty of Medicine, University of Ottawa and Senior Scientist, Children's Hospital of Eastern Ontario Research Institute CBER BEST: Leveraging AI to Build an Automated Adverse Events Reporting System *Hussein Ezzeldin, Ph.D.,* Senior Staff Fellow, US Food and Drug Administration Panel discussion of speakers with *David Vidal, J.D,* Administrator for RA/QA, Center for Digital Health, Mayo Clinic and *Nilay Shah, Ph.D.*, Division Chair, Health Policy Research, Mayo Clinic
11:00 a.m.	Break Virtual Posters & Sponsor Booth

Concurrent Breakout Sessions
11:15 a.m. – 12:00 p.m.

Oral Presentations

Moderator: Hongfang Liu, Ph.D.

- Predicting the trend of global COVID-19 spread
  Daniel Witt
- Real-Life Performance, Long-Term Robustness, and Absence of Race Bias in the Artificial Intelligence Enhanced Electrocardiogram for the Detection of Left Ventricular Systolic Dysfunction
  David Harmon, M.D.
- Development of an interpretable machine learning model to differentiate tumefactive multiple sclerosis and glioblastoma using radiomics features extracted from magnetic resonance imaging
  Gian Marco Conte, M.D., Ph.D.

11:15 a.m.

The New Causal Revolution
Adrian Keister, Ph.D.

11:15 a.m.

Mining Patient-Generated Health Data for Improving Patient-Centered Care
Moderator: Ming Huang, Ph.D., Natalie Benda, Aditya Khurana, Fang Li

11:15 a.m.

Data-driven Framework to Realize a Federated Learning Workflow
Paul Cmiel, Sreedhar Kajeepeta, Umesh Udayaprakash

11:15 a.m.

NLPTK: A Self-Service Toolkit for Running Natural Language Processing at the Mayo Clinic
Andrew Wen, MS, Sijia Liu, Ph.D., Sunyang Fu

12:00 p.m.	<u>Poster Boasters</u> *Moderator: Hongfang Liu, Ph.D.* • Prediction of Normal to Mild Cognitive Impairment Conversion using Electronic Health Records *Sunghwan Sohn, Ph.D.* • Automated Identification of Total Knee Arthroplasty Devices in Operative Notes and Radiographs using Artificial Intelligence *Elham Sagheb, MS* • Applying Natural Language Processing to Analyze Clinician Documentations on Patient E-Cigarette Use *Thulasee Jose, M.D.* • CIM Data Science Training Program Successfully Upskills Mayo's Bioinformatics Workforce *William Jenkinson, Ph.D.* • Persistence Homology Machine learning approach in medical imaging informatics *Yashbir Singh, Ph.D.*
12:30 p.m.	Lunch Virtual Posters & Sponsor Booth
1:15 p.m.	**Session Four: Ethics and Humanity** Ethics & Humanity: If AI is the Answer, what is the Question? *Matthew DeCamp, M.D., Ph.D.,* Associate Professor, Center for Bioethics and Humanities and Division of General Internal Medicine, University of Colorado AI: Equity and Inclusion *Sonoo Thadaney*, Executive Director Stanford Medicine Presence Panel discussion of speakers with *Richard Sharp, Ph.D.*, Professor of Biomedical Ethics, Mayo Clinic and *Carolyn Petersen, MBI, MS, FAMIA*, Asst Professor of Biomedical Informatics, Mayo Clinic

Concurrent Breakout Sessions
2:15 p.m. – 3:00 p.m.

<u>Oral Presentations</u>
Moderator: Mark H. Siska. R.Ph

- A Living Network Meta-Analysis of First Line Treatment of Metastatic Kidney Cancer
  Irbaz Riaz, M.B.B.S., MS
- Artificial Intelligence for Kidney Stone Spectra Analysis: The Application of an AI Algorithm for Quality Assurance in the Clinical Laboratory
  Patrick Day, MT
- Building a binary classifier to triage cancer patients for targeted drug therapy using microsatellite instability as a biomarker
  Teja Koganti

2:15 p.m.
****This session will not award AMA CME credit***
Strengthening the Patient-Centric Ecosystem with the use of AI
Paul Cmiel, Sreedhar Kajeepeta, Punit Kamrah

2:15 p.m.
Engineering AI into Healthcare: A Journey through Discovery, Translation and Application, a Panel Discussion

Janine Kamath, MA, MBA, Atul Dhanorker, MS, Michael Repede, Spencer Richards, MBA, MHA	
2:15 p.m. Ensuring AI Equity in Productization, a Panel Discussion *John Bagby, David Vidal, Mark Sendak, Jennifer Stoll*	
2:15 p.m. Mining Patient-Generated Health Data for Improving Patient-Centered Care (part II) *Moderator: Ming Huang, Ph.D., Dezhi Wu, Patricia Cavazos-Rehg, Yang Ren*	
3:00 p.m.	Closing Remarks *Ajai Sehgal,* Chief Data & Analytics Officer, Mayo Clinic