

IEEE MIT Undergraduate Research Technology Conference 2021  
 Technical Paper Oral Presentation Schedule

<b>Saturday, October 9, 2021</b> <b>Hopin: Session Room A</b> <b>Machine Learning / Artificial Intelligence (AI) Track #1</b> <b>Track Chair: James Byleckie</b>		
EST TIME	PAPER TITLE	PRESENTERS
10:30AM	<b>ID-7</b> ConflictClassifier: An Interpretable Pipeline to Identify Contradictions in Clinical Notes	<b>Sharon Jiang</b> (Massachusetts Institute of Technology)
10:40AM	<b>ID-12</b> Document Classification with Termolator for COVID-19 Literature	<b>Muyan Jiang</b> (New York University, Abu Dhabi)
10:50AM	<b>ID-14</b> Real-Time Forecasting of US COVID-19 Mortality : A Non-Mechanistic Approach Using Machine Learning and Novel Digital Data	<b>Saketh Sundar</b> (River Hill High School/MIT Laboratory for Computational Physiology)
11:00AM	<b>ID-15</b> GLAS: A Global Landslide Analytics System	<b>Ishaan Javali, Shrey Joshi</b> (Plano East Senior High School)
11:10AM	<b>ID-16</b> Investigating Federated Learning strategies for Pneumonia Image Classification	<b>Nitin Nikamanth Appiah Balaji</b> (SSN College of Engineering)
11:20AM	<b>ID-19</b> AI For Bias Detection: Investigating the Existence of Racial Bias in Police Killings	<b>Anaiy Somalwar</b> (BASIS Independent Silicon Valley)
11:30AM	<b>ID-28</b> Computing Movie Script Similarity with Neural Word Embeddings	<b>Theodore Patsis</b> (Athens College Psychico College)
11:40AM	<b>ID-33</b> Recurrent Variational Open-Set Recognition	<b>Amelia L Norman</b> (University of Virginia); <b>Benjamin Diamond</b> (Worcester Polytechnic Institute); <b>Sean C Jordan</b> (University of Maryland)
11:50AM	<b>ID-34</b> Robustness Testing of Artificial Intelligence-Driven Hand Biometric-Based User Authentication in Mobile Devices	<b>Ethan S Li; Brian Zheng; Eric M Xie</b> (Rutgers University); <b>Emily C Liew</b> (West Orange High School); <b>Anushya Shankar</b> (West Windsor-Plainsboro High School South)
12:00PM	<b>ID-36</b> A Distributed Decision Tree on Hadoop	<b>William Jones</b> (SUNY New Paltz)
12:10PM	<b>ID-54</b> AdversarialDroid: A Deep Learning based Malware Detection Approach for Android System Against Adversarial Example Attacks	<b>Giuseppe D'Ambrosio</b> (New York Institute of Technology)

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**Saturday, October 9, 2021**  
**Hopin: Session Room B**  
**Innovative Technologies Track**  
**Track Chair: Gianna Torpey**

EST TIME	PAPER TITLE	PRESENTERS
10:30AM	<b>ID-18</b> Optimizing a Microgrid	<b>Phevos Paschalidis</b> (Boston University)
10:40AM	<b>ID-23</b> Student Engagement Through a Web Application	<b>Seth P Benson</b> (United States Military Academy); <b>Andrew C Bregman</b> (West Point)
10:50AM	<b>ID-31</b> Modeling Li-ion Battery Behavior to Identify Safety Limits	<b>Rhea Kripalani</b> (High Technology High School); <b>Alice Gaehring</b> (Seneca High School); <b>Dakota Neuls</b> ; <b>Owen Rondeau</b> ; <b>Naomi Schlag</b> (Rutgers University)
11:00AM	<b>ID-40</b> Quantitative Analysis of Crowdsourced Platforms for Application in Higher Education	<b>Julia C Patterson</b> ; <b>Aryan Gandhi</b> ; <b>Joey Avallone</b> (Rutgers University)
11:10AM	<b>ID-49</b> Forecasting Evictions to Determine Areas at High Risk of Housing Insecurity	<b>James Houghton</b> (The Pingry School); <b>Nandini Swami</b> ; <b>Alexandra D Weber</b> ; <b>Hugh Keenan</b> (Rutgers University)
11:20AM	<b>ID-50</b> Constructing the Ideal Components of Crowdsourcing Platforms for Higher Education	<b>Sarah E Bargfrede</b> ; <b>Aidan Ward</b> (Rutgers University); <b>Jack Finning</b> (Delbarton School)
11:30AM	<b>ID-52</b> A Novel Method for Protein-Protein Interface Analysis Using Sonification	<b>Sophia E Meytin</b> (Walter Johnson High School)
11:40AM	<b>ID-58</b> A Novel Wildlife Poaching Detection Solution using Spatio-temporal Data with Dynamic Time Warping	<b>Anika Puri</b> (Horace Greeley High School)
11:50AM	<b>ID-59</b> Hydroelectric Sensor System for Monitoring Stormwater Runoff Pollutants	<b>Rishabh Jain</b> (Old Bridge High School); <b>Gabriel Z. Kigner</b> ; <b>Aneesh Nagalkar</b> ; <b>Samuel Ngiam</b> ; <b>Isha Wagle</b> (Rutgers University)
12:00PM	<b>ID-66</b> BEANNA: A Binary-Enabled Architecture for Neural Network Acceleration	<b>Caleb Terrill</b> ; <b>Fred Chu</b> (University of California, Los Angeles)
12:10PM	<b>ID-29</b> Heart Rate Abnormality Detection Using Video-based Remote Measurement with Cross-verified Feature Disentangling Deep Learning Strategy	<b>Connie Jiang</b>

**AM TRACK #2**

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**Saturday, October 9, 2021**  
**Hopin: Breakout Room C**  
**Robotics and Controls Track,**  
**Space Application and Technologies Track**  
**Track Chair: Karen Liberman**

EST TIME	PAPER TITLE	PRESENTERS
10:30AM	<b>ID-6</b> Development of an autonomously navigating robot capable of conversing and scanning body temperature to help screen for COVID-19	<b>Ryan Kim</b> (Choate Rosemary Hall)
10:40AM	<b>ID-61</b> An Efficient and Reliable Multi-Robot Navigation Platform with Collision Avoidance	<b>David J Crafts; Jake Sousa</b> (Wentworth Institute of Technology)
10:50AM	<b>ID-1</b> Modeling the Effects of J <sub>2</sub> Perturbation on Orbital Debris and Satellite Motion	<b>Kristina M Hughes</b> (United States Military Academy)
11:00AM	<b>ID-8</b> Unscented Filtering of Angles-Only Measurements of Orbital Debris	<b>Ethan Rabb</b> (United States Military Academy)
11:10AM	<b>ID-26</b> Mechanical Design of a ROVER prototype for Exploration tasks on Mars: Structural and Transient Dynamics simulation analysis	<b>Johan J. Nuñez-Quispe</b> (Universidad Nacional de Ingeniería)
11:20AM	<b>ID-45</b> Low-Friction Demonstrator for Magnetic Actuation of Spacecraft	<b>Guadalupe Bernal</b> (Cornell University)
11:30AM	<b>ID-62</b> The Applications of Subsurface Assemblies on Thermoelectric Generators for Lunar Processes	<b>Eliazar Q Montemayor III; Teresa Doley; Kane Timlin</b> (Montgomery College); <b>Matthew Lewton</b> (Purdue University Student)
11:40AM	<b>ID-120</b> SALT: Spacecraft Air Leak Technology	<b>Stephanie Wan, Alyssa Wan, Hannah Robinson</b> (Windham High School)
11:50AM		
12:00PM		
12:10PM		

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**Saturday, October 9, 2021**  
**Hopin: Breakout Room A**  
**Machine Learning / Artificial Intelligence (AI) Track #2**  
**Track Chair: James Byleckie**

EST TIME	PAPER TITLE	PRESENTERS
1:00PM	<b>ID-37</b> Assessing Paper Texture Similarity in Matisse Lithographs Using a Triplet Neural Network	Karen M Aguilar; Shelby Powers (Western Washington University)
1:10PM	<b>ID-38</b> Energy and Cost Considerations for GPU Accelerated AI Inference Workloads	Tergel Molom-Ochir (University of Massachusetts Amherst); Rohan P Shenoy (Amherst Regional High School)
1:20PM	<b>ID-41</b> Regression Based Machine Learning to Generate and Validate a Metric for Food Insecurity	Matthew Balestier; Myra Cui; Riya Nandakumar; Anaika Tyagi; Cristian A Vintimilla (Rutgers University)
1:30PM	<b>ID-43</b> Emotion-Based Style Transfer On Visual Art Using Gram Matrices	Nidhi Jadhav; Daniel H Bossett; Leilani Johnson; David Heimowitz; Helen Zheng; Arti Singh (Rutgers University)
1:40PM	<b>ID-46</b> Using Deep Learning for Urban Pedestrian Counting	Edward W Deleu; Stefan Elez; Ansh Gadodia; Kyra Macvaugh; Grace Zhao (Rutgers University)
1:50PM	<b>ID-51</b> Effects of Pressure on Acoustic Hand Biometric Authentication	Angela A Claveria; Raina E Maldonado; Akshay Mistry; Siddharth Parikh; Kevin Y Song; Srinidhi Venkatesh (Rutgers University)
2:00PM	<b>ID-55</b> Using Fused Neural Networks for a Multi-Sensory Approach to Human Emotion Classification	Kevin Yang (Union County Magnet High School); Timothy Ninan; Jack T O'Donnell; Saniya Srivastava; Vasumathi Venkat; Haley Kahn (Rutgers University)
2:10PM	<b>ID-57</b> Human Context Recognition: A Controllable GAN Approach	Harrison Y Kim (Northeastern University); Joshua DeOliveira (Worcester Polytechnic Institute)
2:20PM	<b>ID-63</b> A Novel Method for Automated Identification and Prediction of Invasive Species Using Deep Learning	Nathan Elias (Liberal Arts and Science Academy)
2:30PM	<b>ID-67</b> Sentiment Analysis on the News to Improve Mental Health	Saurav Kumar (Stanford University); Rushil Jayant (Homestead High School)

**PM TRACK #1**

IEEE MIT Undergraduate Research Technology Conference 2021  
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**Saturday, October 9, 2021**

**Hopin: Breakout Room B**

**BioEECS Track; Computer Systems, Theoretical Computer Science & Math Track  
 Circuits, Materials, & NanotechTrack**

**Track Chair: Jones Yu**

EST TIME	PAPER TITLE	PRESENTERS
1:00PM	<b>ID-21</b> Enhancing the Bionic Eye: A Real-time Image Optimization Framework to Encode Color and Spatial Information Into Retinal Prostheses	<b>William Huang</b> (Palos Verdes Peninsula High School)
1:10PM	<b>ID-35</b> The Eagle Hand: Innovations in 3D Printing Prosthetic Hands	<b>Kristen E Kelly; Reilly N Desai; Vijay Sreenivasan; Karis A Lewis</b> (Rutgers University - New Brunswick)
1:20PM	<b>ID-64</b> Engineering a Functional and Affordable 3D Printed Prosthetic Hand	<b>Aarav Patel; Elizabete Grigalinovica-Leja; Nikhil Arayath</b> (Rutgers University); <b>Naysa Douglas</b> (Willingboro High School); <b>Lana Duke</b> (Florence Township Memorial High School)
1:30PM	<b>ID-25</b> A Simple Microfluidics Design for Rapid Quantification of E. Coli in Contaminated Water	<b>Sreya Vangara</b> (Massachusetts Institute of Technology)
1:40PM	<b>ID-20</b> Enhanced Mobile Microclimate System	<b>QianYing Zeng</b> (Wentworth Institute of Technology)
1:50PM	<b>ID-39</b> Mobile Question System for TCM Data Collection	<b>Yen Le</b> (Wentworth Institute of Technology)
2:00PM	<b>ID-44</b> A Study of Illumination Filtering and Movement Detection in Video Streaming Processing	<b>Mai Phuong Nguyen</b> (University of North Carolina at Charlotte)
2:10PM	<b>ID-60</b> NoteTogether: Distributed Note Taking with Blockchain	<b>James D Kerr</b> (Wentworth Institute of Technology)
2:20PM	<b>ID-22</b> ECG Data Analysis with MSE and Machine Learning	<b>Abhigya Pote Shrestha</b> (Wentworth Institute of Technology)
2:30PM	<b>ID-42</b> Enhancing Pulse Measurement with IoT Technologies for TCM	<b>Tung Pham</b> (Wentworth Institute of Technology)
2:40PM		

**PM TRACK #2**

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Saturday, October 9, 2021 Hopin: Breakout Room C FIRST FLL Project Innovation Track Chair: Soon Wan		
EST TIME	PAPER TITLE	PRESENTERS
1:00PM		
1:10PM		
1:20PM		
1:30PM		
1:40PM		
1:50PM		
2:00PM	<b>FIRST LEGO League:</b> Team Blue Box - Project Research	Jocelyn Mcgarry, Govind Valiyodiyil, Sasha Luchanok, Matthew Dona, Stafen Barbu, Aditya Biju, Layla Conwey
2:10PM	<b>FIRST LEGO League:</b> Team ICE Box - Project Research	Haashini Gounder, Harsha Gounder, Rayhan Riaz, Tarek Benzerrouk, Hassiba Benzerrouk, Kiaan Mehta, Aryan Sharma
2:20PM		
2:30PM		
2:40PM		