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

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

AM TRACK #1

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

	Saturday, October 9, 2021 Hopin: Session Room B Innovative Technologies Track Track Chair: Gianna Torpey	
EST TIME	**PAPER TITLE**	**PRESENTERS**
10:30AM	**ID-18** **Optimizing a Microgrid**	**Phevos Paschalidis** (Boston University)
10:40AM	**ID-23** **Student Engagement Through a Web Application**	**Seth P Benson** (United States Military Academy); **Andrew C Bregman** (West Point)
10:50AM	**ID-31** **Modeling Li-ion Battery Behavior to Identify Safety Limits**	**Rhea Kripalani** (High Technology High School); **Alice Gaehring** (Seneca High School); **Dakota Neuls; Owen Rondeau; Naomi Schlag** (Rutgers University)
11:00AM	**ID-40** **Quantitative Analysis of Crowdsourced Platforms for Application in Higher Education**	**Julia C Patterson; Aryan Gandhi; Joey Avallone** (Rutgers University)
11:10AM	**ID-49** **Forecasting Evictions to Determine Areas at High Risk of Housing Insecurity**	**James Houghton** (The Pingry School); **Nandini Swami; Alexandra D Weber; Hugh Keenan** (Rutgers University)
11:20AM	**ID-50** **Constructing the Ideal Components of Crowdsourcing Platforms for Higher Education**	**Sarah E Bargfrede; Aidan Ward** (Rutgers University); **Jack Finning** (Delbarton School)
11:30AM	**ID-52** **A Novel Method for Protein-Protein Interface Analysis Using Sonification**	**Sophia E Meytin** (Walter Johnson High School)
11:40AM	**ID-58** **A Novel Wildlife Poaching Detection Solution using Spatio-temporal Data with Dynamic Time Warping**	**Anika Puri** (Horace Greeley High School)
11:50AM	**ID-59** **Hydroelectric Sensor System for Monitoring Stormwater Runoff Pollutants**	**Rishabh Jain** (Old Bridge High School); **Gabriel Z. Kigner; Aneesh Nagalkar; Samuel Ngiam; Isha Wagle** (Rutgers University)
12:00PM	**ID-66** **BEANNA: A Binary-Enabled Architecture for Neural Network Acceleration**	**Caleb Terrill; Fred Chu** (University of California, Los Angeles)

AM TRACK #2

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

<table>
<tr><td colspan="3">Saturday, October 9, 2021
Hopin: Breakout Room C
Robotics and Controls Track,
Space Application and Technologies Track
Track Chair: Karen Liberman</td></tr>
<tr><td>EST TIME</td><td>PAPER TITLE</td><td>PRESENTERS</td></tr>
<tr><td>10:30AM</td><td>ID-6
Development of an autonomously navigating robot capable of conversing and scanning body temperature to help screen for COVID-19</td><td>Ryan Kim
(Choate Rosemary Hall)</td></tr>
<tr><td>10:40AM</td><td>ID-61
An Efficient and Reliable Multi-Robot Navigation Platform with Collision Avoidance</td><td>David J Crafts; Jake Sousa
(Wentworth Institute of Technology)</td></tr>
<tr><td>10:50AM</td><td>ID-1
Modeling the Effects of J_2 Perturbation on Orbital Debris and Satellite Motion</td><td>Kristina M Hughes
(United States Military Academy)</td></tr>
<tr><td>11:00AM</td><td>ID-8
Unscented Filtering of Angles-Only Measurements of Orbital Debris</td><td>Ethan Rabb
(United States Military Academy)</td></tr>
<tr><td>11:10AM</td><td>ID-26
Mechanical Design of a ROVER prototype for Exploration tasks on Mars: Structural and Transient Dynamics simulation analysis</td><td>Johan J. Nuñez-Quispe
(Universidad Nacional de Ingeniería)</td></tr>
<tr><td>11:20AM</td><td>ID-45
Low-Friction Demonstrator for Magnetic Actuation of Spacecraft</td><td>Guadalupe Bernal
(Cornell University)</td></tr>
<tr><td>11:30AM</td><td>ID-62
The Applications of Subsurface Assemblies on Thermoelectric Generators for Lunar Processes</td><td>Eliazar Q Montemayor III; Teresa Doley; Kane Timlin (Montgomery College); Matthew Lewton (Purdue University Student)</td></tr>
<tr><td>11:40AM</td><td>ID-120
SALT: Spacecraft Air Leak Technology</td><td>Stephanie Wan, Alyssa Wan, Hannah Robinson (Windham High School)</td></tr>
<tr><td>11:50AM</td><td></td><td></td></tr>
<tr><td>12:00PM</td><td></td><td></td></tr>
<tr><td>12:10PM</td><td></td><td></td></tr>
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AM TRACK #3

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

	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	**ID-37** Assessing Paper Texture Similarity in Matisse Lithographs Using a Triplet Neural Network	**Karen M Aguilar; Shelby Powers** (Western Washington University)
1:10PM	**ID-38** 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	**ID-41** 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	**ID-43** 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	**ID-46** Using Deep Learning for Urban Pedestrian Counting	**Edward W Deleu; Stefan Elez; Ansh Gadodia; Kyra Macvaugh; Grace Zhao** (Rutgers University)
1:50PM	**ID-51** 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	**ID-55** 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	**ID-57** Human Context Recognition: A Controllable GAN Approach	**Harrison Y Kim** (Northeastern University); **Joshua DeOliveira** (Worcester Polytechnic Institute)
2:20PM	**ID-63** A Novel Method for Automated Identification and Prediction of Invasive Species Using Deep Learning	**Nathan Elias** (Liberal Arts and Science Academy)
2:30PM	**ID-67** 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
Technical Paper Oral Presentation Schedule

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

PM TRACK #2