2021 IEEE Space Computing Conference
Program Schedule

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Times shown as Eastern Daylight Time			Monday, August 23, 2021			
Actual Start Time	Actual Duration	Actual End Time	Description	Presentation Title	Presenter	Organization
10:00 AM	0:09	10:09 AM	Conference Introduction	SCC2021		
10:10 AM	0:35	10:45 AM	Keynote A	Future Vision of the US Space Force and Long-term S&T Challenges	Dr. Joel Mozer	US Space Force
10:46 AM	0:05	10:51 AM	Live Q&A Session			
10:52 AM	0:15	11:07 AM	Break			
11:08 AM	0:48	11:56 AM	Keynote B	Landing Perseverance with Terrain Relative Navigation	Dr. Andrew Johnson	JPL
11:57 AM	0:05	12:02 PM	Live Q&A Session			
12:03 PM	0:27	12:30 PM	Break			
12:31 PM	0:02	12:33 PM	**Track #1 Introduction**	**Track 1: Components: Jonny Pellish**	**Jonny Pellish**	**NASA GSFC**
12:34 PM	0:20	12:54 PM	Track #1 Presentation 1	GR765 - Multi-Core LEON5FT System-on-Chip	Jan Andersson	Cobham Gaisler
12:55 PM	0:14	1:09 PM	Track #1 Presentation 2	Electronic Parts and ESD	Shri Agarwal	JPL
1:10 PM	0:19	1:29 PM	Track #1 Presentation 3	Functional Safety and AI: from component level to edge	Riccardo Mariani	Nvidia
1:30 PM	0:19	1:49 PM	Track #1 Presentation 4	Reliability Survey of SRAM-based FPGA Open Source RISC-V Processors	Andrew Wilson	BYU
1:50 PM	0:14	2:04 PM	Track #1 Presentation 5	PRO-GAGE: A High Performance Compact GAGE Hash Function Processor for Small Space Technology	Mohamed El-Hadedy	California Polytechnic University
2:05 PM	0:20	2:25 PM	Live Q&A Session			
2:26 PM	0:34	3:00 PM	Break			
3:00 PM	1:00	4:00 PM	Sponsor Engagement Session	Exhibitor Booths and Presentations		
4:00 PM	0:23	4:23 PM	Track #1 Presentation 6	Trade-Space for Radiation-Tolerant Neuromorphic Processors	Michael Lowry	NASA ARC
4:24 PM	0:21	4:45 PM	Track #1 Presentation 7	Approaches for Phasing Commercial-Off-The-Shelf Electronic Parts into NASA Missions	Jesse Leitner	NASA GSFC
4:56 PM	0:16	5:12 PM	Track #1 Presentation 8	New Frontiers in Applied Non-Von Neumann Computing	Neil Sampson & George Williams	GSI Technology
5:13 PM	0:14	5:27 PM	Track #1 Presentation 9	Scalable Microprocessors and Microcontrollers for Space	Casey McCoy & Nicolas Ganry	Microchip
5:28 PM	0:18	5:46 PM	Track #1 Presentation 10	FuSa for Space – Functional Safety Methods and Tools for Space Applications	Ian Land & Meirav Nitzan	Synopsys
5:47 PM	0:20	6:07 PM	Live Q&A Session			

Times shown as Eastern Daylight Time			Tuesday, August 24, 2021			
Actual Start Time	Actual Duration	Actual End Time	Description	Presentation Title	Presenter	Organization
10:00 AM	0:05	10:05 AM	Day 2 Kickoff			
10:05 AM	0:35	10:40 AM	Keynote C	NASA Space Technology Mission Directorate (STMD) Technology Portfolio	Mark McDonald	NASA STMD
10:41 AM	0:05	10:46 AM	Live Q&A Session			
10:47 AM	0:18	11:05 AM	Break			
11:05 AM	0:29	11:34 AM	Keynote D	Exploration of Titan with the Rotorcraft-Lander Dragonfly	Dr. Doug Adams	JHUAPL
11:35 AM	0:05	11:40 AM	Live Q&A Session			
11:41 AM	0:39	12:20 PM	Break			
12:20 PM	0:03	12:23 PM	**Track #2 Introduction**	**Track 2: Computing Architectures: Steve Crago**	**Stephen Crago**	**USC/ISI**
12:24 PM	0:16	12:40 PM	Track #2 Presentation 1	De-RISC: the First RISC-V Space-graded Platform for Safety-critical Systems	Stefano Ribes	Cobham Gaisler
12:41 PM	0:14	12:55 PM	Track #2 Presentation 2	The Future of High Performance Computing in Space – The Path Ahead	Jim Butler	JPL
12:56 PM	0:20	1:16 PM	Track #2 Presentation 3	PCB Design Methodology for High-performance Flight Computing Systems	Nick Franconi	NASA GSFC
1:17 PM	0:19	1:36 PM	Track #2 Presentation 4	RISC-V Benchmarking for Onboard Sensor Processing	Michael Cannizzaro	University of Pittsburgh - NSF SHREC
1:37 PM	0:20	1:57 PM	Live Q&A Session			
1:58 PM	0:37	2:35 PM	Break			
2:36 PM	0:20	2:56 PM	Track #2 Presentation 5	How to Operate a Helicopter on Mars in 3 Easy Steps	Timothy Canham	NASA JPL
2:57 PM	0:18	3:15 PM	Track #2 Presentation 6	NASA SpaceCube: Miniaturized Platform for Onboard Processing and Analysis	Chris Wilson	NASA GSFC
3:16 PM	0:23	3:39 PM	Track #2 Presentation 7	Neuromorphic architectures for edge computing under extreme environments	Angel Yanguas-Gil	Argonne National Laboratory
3:40 PM	0:17	3:57 PM	Track #2 Presentation 8	Progress on a RFSoC based readout system for the LYNX X-ray Observatory	Josef Frisch	Stanford (SLAC)
3:59 PM	0:19	4:18 PM	Live Q&A Session			
4:19 PM	0:31	4:50 PM	Break			
4:50 PM	0:03	4:53 PM	**Track #3 Introduction**	**Track 3: Avionics Systems: David Rutishauser**	**David Rutishauser**	**NASA JSC**
4:54 PM	0:19	5:13 PM	Track #3 Presentation 1	Moving Target Defense for Space Systems	Chris Jenkins	Sandia National Laboratories
5:14 PM	0:21	5:35 PM	Track #3 Presentation 2	Packet Based Modular Redundancy	Christopher Heistand	JHUAPL
5:36 PM	0:20	5:56 PM	Live Q&A Session			

Times shown as Eastern Daylight Time			Wednesday, August 25, 2021			
Actual Start Time	**Actual Duration**	**Actual End Time**	**Description**	**Presentation Title**	**Presenter**	**Organization**
10:00 AM	0:05	10:05 AM	Day 3 Kickoff			
10:05 AM	0:38	10:43 AM	Keynote E	Computational Needs for Future NASA Direct Imaging Exoplanet Mission Concepts	Dr. Matthew Bolcar	NASA GSFC
10:44 AM	0:05	10:49 AM	Live Q&A Session			
10:50 AM	0:15	11:05 AM	Break			
11:05 AM	0:36	11:41 AM	Keynote F	Interstellar Probe: The Next Generation(s) of Space Exploration	Michael Paul	JHUAPL
11:42 AM	0:05	11:47 AM	Live Q&A Session			
11:48 AM	0:32	12:20 PM	Break			
12:20 PM	0:03	12:23 PM	Track #3 Re-Introduction	Track 3: Avionics Systems: David Rutishauser	David Rutishauser	NASA JSC
12:24 PM	0:17	12:41 PM	Track #3 Presentation 3	Towards an Interoperable Security Policy for Space-Based Internetworks	Edward Birrane & Sarah Heiner	JHUAPL
12:42 PM	0:20	1:02 PM	Track #3 Presentation 4	NASA Onboard Wireless Overview	Ray Wagner	NASA JSC
1:03 PM	0:22	1:25 PM	Track #3 Presentation 5	Cloud Computing in Space with Software-based Fault Tolerance on GPUs	Ian Troxel	Troxel Aerospace
1:26 PM	0:20	1:46 PM	Live Q&A Session			
1:47 PM	0:30	2:17 PM	Break			
2:18 PM	0:02	2:20 PM	Best Paper Award	Presentation of Best Paper Award		
2:20 PM	1:10	3:30 PM	Sponsor Engagement Session	Exhibitor Booths and Presentations		
3:30 PM	0:01	3:31 PM	**Track #4 Introduction**	**Track 4: Flight Data Processing: Beth Timmons**	**Beth Timmons**	**NASA GSFC**
3:32 PM	0:21	3:53 PM	Track #4 Presentation 1	Comparing Data Processing Options for Spacecraft	Josh Donckels	AFRL RV
3:54 PM	0:17	4:11 PM	Track #4 Presentation 2	Threat Data Generation for Space Systems	Meghan Galiardi Sahakian	Sandia National Laboratories
4:12 PM	0:19	4:31 PM	Track #4 Presentation 3	Onboard Image Multi-Scale Tile Classification for Satellites and Other Spacecraft	Evan Gretok	NSF Center for Space, High-performance, and Resilient Computing (SHREC)
4:32 PM	0:25	4:57 PM	Track #4 Presentation 4	Guiding DART to Impact - the FPGA SoC Design of the DRACO Image Processing Pipeline	Dmitriy Bekker	JHUAPL
4:58 PM	0:20	5:18 PM	Live Q&A Session			

Times shown as Eastern Daylight Time			Thursday, August 26, 2021			
Actual Start Time	**Actual Duration**	**Actual End Time**	**Description**	**Presentation Title**	**Presenter**	**Organization**
10:00 AM	0:05	10:05 AM	Day 4 Kickoff			
10:05 AM	0:40	10:45 AM	Keynote G	Instruction Sets Want To Be Free of Gravity	Dr. Krste Asanovic	SiFive, Chair of RISC-V International
10:46 AM	0:05	10:51 AM	Live Q&A Session			
10:52 AM	0:13	11:05 AM	Break			
11:05 AM	0:01	11:06 AM	Track #4 Re-Introduction	Track 4: Flight Data Processing: Beth Timmons	Beth Timmons	NASA GSFC
11:07 AM	0:21	11:28 AM	Track #4 Presentation 5	OSAM-1 Hybrid Computing Architecture	Dan MacKenzie	NASA GSFC
11:29 AM	0:14	11:43 AM	Track #4 Presentation 6	Safe and Precise Landing – Integrated Capabilities Evolution (SPLICE) Descent and Landing Computer (DLC)	David Rutishauser	NASA JSC
11:44 AM	0:16	12:00 PM	Track #4 Presentation 7	Opus: Space-Based Data Center	Elisabeth Nguyen	Aerospace Corporation
12:01 PM	0:19	12:20 PM	Track #4 Presentation 8	Building Custom Processors For Space Using RISC-V	Chris Jones	SiFive
12:21 PM	0:20	12:41 PM	Live Q&A Session			
12:42 PM	0:30	1:12 PM	Break			
1:13 PM	0:03	1:16 PM	**Track #5 Introduction**	**Track 5: Machine Learning: Craig Vineyard**	**Craig Vineyard**	**Sandia National Laboratories**
1:17 PM	0:20	1:37 PM	Track #5 Presentation 1	Implementation and Performance Analysis of Machine Learning Algorithms on Spaceflight Hardware	Mike Koets	Southwest Research Institute
1:38 PM	0:17	1:55 PM	Track #5 Presentation 2	Improving Dependability of Onboard Deep Learning with Resilient TensorFlow	Tyler Garrett	University of Pittsburgh
1:56 PM	0:16	2:12 PM	Track #5 Presentation 3	A Methodology for Evaluating and Analyzing FPGA-Accelerated, Deep-Learning Applications for Onboard Space Processing	Sebastian Sabogal	University of Pittsburgh - NSF SHREC
2:13 PM	0:17	2:30 PM	Track #5 Presentation 4	JENOVA: Joint Exploration of Neuromorphic Orbital Vehicle Architectures	Josh Donckels	AFRL RV
2:31 PM	0:20	2:51 PM	Live Q&A Session			
2:52 PM	0:30	3:22 PM	Break			
3:23 PM	0:17	3:40 PM	Track #5 Presentation 5	Neuromorphic Computing for Spacecraft's Terrain Relative Navigation: A Case of Event-Based Crater Classification Task	Kariya Kazuki	Japan Aerospace Exploration Agency
3:41 PM	0:21	4:02 PM	Track #5 Presentation 6	Designing a Radiation-Tolerant, Reconfigurable Computing Platform for Deep Learning Acceleration using Xilinx Kintex UltraScale FPGAs	Jason Vidmar & Troy Jones	Xilinx
4:03 PM	0:21	4:24 PM	Track #5 Presentation 7	SpikePropamine, Meta-Learning Synaptic Plasticity for Spiking Neural Networks	Joe Hays	Naval Research Lab
4:25 PM	0:19	4:44 PM	Track #5 Presentation 8	Creating AI/ML Applications in RT PolarFire® FPGAs with the VectorBlox™ SDK	Ken O'Neill	Microchip
4:45 PM	0:20	5:05 PM	Live Q&A Session			
5:05 PM	0:10	5:15 PM	Closing Remarks			