Virtual ModSim 2021 – Day One, Tuesday October 5, 2021	
Start 11:00AM Eastern Daylight Time (US-EDT)	
Introductions and Keynote Speaker	
11:00-11:15 am	Introduction to the 2021 ModSim Workshop – **Adolfy Hoisie**
11:15am-12:00 pm	**Keynote Speaker:** Victoria Coleman - **Digital Engineering in support of the Department of the Air Force Mission**
Session Title Machine Learning for ModSim – Session Lead: Noel Wheeler	
12:00-12:30 pm	Adolfy Hoisie – **Computer Architecture Simulation Using Machine Learning**
12:30-1:00 pm	Rick Stevens - **The Development and Performance of AI Driven Surrogates in COVID-19 Therapeutic Small Molecule Design Workflows**
1:00-1:30 pm	Lizhong Chen – **Enabling Large Architectural Design Space Exploration Using Machine Learning**
1:30-1:40 pm	*10-minute Break*
Session Title ModSim State-of-the-art: Methods, tools, projects – Session Lead: Almadena Chtchelkanova	
1:40-2:10 p.m.	Felix Wolf – **The Price Performance of Performance Models**
2:10-2:40 p.m.	Jason Liu – **A Unified Framework for Performance Analysis and Optimization of Memory Systems**
2:40-3:10 p.m.	Matt Sinclair– **Modeling Modern GPU Applications in gem5**
3:10-3:20 p.m.	***Closing Remarks***
	End of Day One

ModSim 2021 – Day Two, Wednesday October 6, 2021	
Start 11:00AM Eastern Daylight Time (US - EDT)	
11:00-11:05 am	Opening Remarks Day 2 – **Adolfy Hoisie**
11:05-11:35 am	Luca Carloni – **ESP: an Open-Source Platform for Collaborative Design of Heterogeneous Systems**
11:35am -12:05 pm	Aurel Lazar **– FlyBrainLab: a Complete Programming Environment for Discovering the Functional Logic of the Fruit Fly Brain**
12:05-12:45pm	**Keynote Speaker**: Serge Leef - **Accelerating Simulation via AI-derived Reduced-Order Models**
Session Title AI/ML Application Workload Characterization – Session Lead: Bruce Childers	
12:45-1:15 pm	Torsten Hoefler – **High-Performance Scalable Deep Learning**
1:15-1:45 pm	Joe Cross – **ModSim as it applies to ERI**
1:45-2:15 pm.	David Kanter – **Challenges and Directions in ML System Performance: The MLPerf™ Story**
2:15-2:25 p.m.	***Closing Remarks***
	End of Day Two

ModSim 2021 – Day Three, Thursday October 7, 2021	
Start 11:00AM Eastern Daylight Time (US-EDT)	
11:00-11:10AM	Opening Remarks – Session Leader
Contributed Presentations Session: – RAPID-FIRE : Session Leads: Martin Schulz and Pradip Bose	
11:10-11:20a.m.	Tushar Krishna – **ASTRA-sim: Enabling SW/HW Co-Design Exploration for Distributed Deep Learning Training Platforms**
11:20-11:30a.m.	Bogil Kim – **NPUsim: Full-System, Cycle-Accurate, Function Simulations of Deep Neural Network Accelerators**
11:30-11:40a.m.	T. Patrick Xiao – **CrossSim: GPU-Accelerated Simulation of Analog Neural Networks**
11:40-11:50a.m.	Arun Rodrigues – **SST-Explorer: Enabling System-level Performance and Reliability Analysis for Designs with Real-World IPs**
11:50am-12:00pm	Geonhwa Jeong – **UNION: A HW-SW Co-Design Ecosystem in MLIR for Evaluating Tensor Operations on Spatial Accelerators**
Poster Only	*Gwen Voskuilen* - ***Towards an Extensible Framework for Accelerated System Simulation***
12:00-12:20pm	***Group 1 Poster Session Q&A – Breakout Rooms***
12:20-12:30p.m.	Daniel Mosse – **sing Occam for Reducing Search Space for Multiobjective Optimization through Machine Learning Models**
12:30-12:40p.m.	Mark Plagge – **ATHENA: A High Efficiency Codesign Tool for Novel Accelerators**
12:40-12:50p.m.	Jaewon Lee – **Trace Generation of Machine Learning Workloads with GTReplay For Intel integrated-GPU Modeling**
12:50-1:00p.m.	Subhankar Pal – **Fast Trace-Driven Simulation of Programmable Heterogeneous Accelerators**
1:00-1:10p.m.	Lingda Li – **Machine Learning Model Exploration for Accurate and Fast Microarchitecture Simulation**
Poster Only	*Jack Jones* - ***SimEng: a fast, easy to use, open source processor simulation framework***
1:10-1:30pm	***Group 2 Poster Session – Breakout Rooms***
1:30-1:40p.m.	Bobby Bruce – **Democratizing Computer SystemSimulation with a Components Library**
1:40-1:50p.m.	Mariam Kiran – **Using AI for Self-Driving Networks**
1:50-2:00p.m.	Sophia Shao – **Enabling Holistic Machine-Learning Hardware Evaluation via Full-System Simulation**
2:00-2:10 p.m.	Thomas Flynn – **Design space-aware statistical simulation with machine learning**
2:10-2:20 p.m.	Jeffrey Young – **Accurately Modeling Sparse Accesses for Benchmarking and Architectural Simulation**
Poster Only	*Ayaz Akram* - ***Simulating Trusted Execution Environments in gem5***
2:20-2:40pm	***Group 3 Poster Session – Breakout Rooms***
2:40-2:50 p.m.	**Closing Remarks – Session Leader**
	End of Day Three

ModSim 2021– Day Four, Friday October 8, 2021	
Start 11:00AM Eastern Daylight Time (US-EDT)	
11:00-11:15 a.m.	*Opening Remarks and Sudhakar Yalamanchili – White Paper AWARD Presented –* ***Hyesoon Kim***
Session Title AI Architectures, Advances in ModSim– Session Lead: Jason Lowe-Power	
11:15-11:45 a.m.	Rob Schreiber – **Wafer-scale Processors for HPC**
11:45am-12:15pm	Luis Ceze – **Improving Model Performance, Portability and Productivity with Apache TVM and the Octomizer**
12:15-12:45 p.m.	Nicholas Malaya –**Accelerating Computational Fluid Dynamics with ML/AI at AMD**
12:45-12:50 p.m.	**Short 5-minute Break**
12:50 – 2:30 p.m.	*Panel:* **What can MODSIM do for AI/ML, and what can AI/ML do for MODSIM?**: *Moderator*: **Shekhar Borkar and Pradip Bose** *Panelist:* **David Kanter, Eric Cheng, Hal Finkel, Hyesoon Kim, Sophia Shao**
2:30 -2:45 p.m.	**Workshop Wrap-up**