SC25 Reproducibility Challenge Seminar

September 19, 2025

REPRODUCIBILITY CHALLENGE

- One of the challenges in the Student Competition Cluster (SCC)
- The Committee is part of the SC25 Technical Committee.

- Chairs:
  - William Godoy, Oak Ridge National Laboratory, godoywf@ornl.gov
  - Tainã Coleman, San Diego Supercomputing Center, tainagdcoleman@gmail.com

- Committee – 13 members:
  - Rabab Alomairy, Massachusetts Institute of Technology (MIT), King Abdullah University of Science and Technology (KAUST)
  - Yousef AlSaqabi, Kuwait University
  - Subhadeep Bhattacharya, NVIDIA Corporation
  - Johannes P Blaschke, Lawrence Berkeley National Laboratory (LBNL), National Energy Research Scientific Computing Center (NERSC)
  - Paola Buitrago, Pittsburgh Supercomputing Center, Carnegie Mellon University
  - Silvina Caino-Lores, French Institute for Research in Computer Science and Automation (INRIA)
  - Rocío Carratalá-Sáez, Universitat de València
  - Jared Coleman, Loyola Marymount University
  - Patrick Diehl, Los Alamos National Laboratory (LANL)
  - Rosa Filgueira, University of St Andrews, Scotland
  - Maria Patrou, Oak Ridge National Laboratory (ORNL)

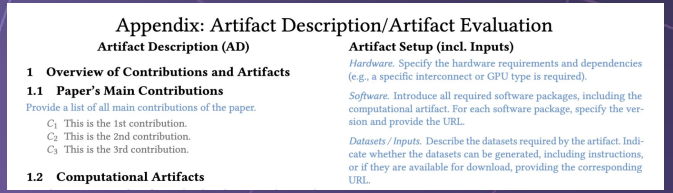
https://sc25.supercomputing.org/2025/09/social-media-graphs-power-sc25-reproducibility-challenge/

William Godoy

Tainã Coleman

The Challenge

- Select a paper from SC24 and prepare tasks to reproduce contents (e.g. figures, trends)
- **Explain the process to student teams and the committee grading the produced reports**
- **Students: prepare a report based on the SC25 AD/AE appendices:**
  - **https://sc25.supercomputing.org/program/papers/ad-ae-appendices/**
  - **https://github.com/weidendo/sc25-repro/tree/main/for-paper-authors**



Appendix: Artifact Description/Artifact Evaluation

Artifact Description (AD)

1 Overview of Contributions and Artifacts

1.1 Paper's Main Contributions

Provide a list of all main contributions of the paper.

C_1 This is the 1st contribution.
C_2 This is the 2nd contribution.
C_3 This is the 3rd contribution.

1.2 Computational Artifacts

Artifact Setup (incl. Inputs)

Hardware. Specify the hardware requirements and dependencies (e.g., a specific interconnect or GPU type is required).

Software. Introduce all required software packages, including the computational artifact. For each software package, specify the version and provide the URL.

Datasets / Inputs. Describe the datasets required by the artifact. Indicate whether the datasets can be generated, including instructions, or if they are available for download, providing the corresponding URL.

- **Document your reproducibility process**
- **Rubric:**
  - **Quality of the results – data and code (20%)**
  - **Quality of the report – reproduced figures and process explanation (70%)**
  - **Description of the environment and configurations (10%)**
  - **Paper = your report….your contribution, not the original paper. e.g. "we try reproducing X, Y, Z from the paper."**
  - **Resource: https://www.darpa.mil/about/heilmeier-catechism**

Paper Selected

S. P. Singhal, S. Hati, J. Young, V. Sarkar, A. Hayashi and R. Vuduc, "Asynchronous Distributed-Memory Parallel Algorithms for Influence Maximization," *SC24: International Conference for High Performance Computing, Networking, Storage and Analysis*, Atlanta, GA, USA, 2024, pp. 1-19, doi: https://doi.org/10.1109/SC41406.2024.00108

"Social networks are very integrated into our modern lives. More recently, we have seen the emergence of "influencers" who start and popularize new trends. That leads to a natural question - what algorithm do we use to declare someone on social media an influencer?"

Souvadra Hati, Georgia Tech

Shubhendra Pal Singhal, Georgia Tech

THANK YOU FOR ALL YOUR HARD WORK ON SC25!

Thanks!

The Student Cluster Competition Committee:

- **Le Mai Liwag Nguyen Weakley, Indiana University**
- **Abhinav Thota, Indiana University**
- **Stephen Leak, Lawrence Berkeley National Laboratory**

The SC25 Technical Committee

Chairs: Amanda Randles (Duke University) , Martin Schultz (Technical University of Munich)