CoMSES Digest: Winter 2022

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Editor's Note

In this digest I would like to briefly focus on a topic that is often addressed within the CoMSES community – the importance of documentation. Good documentation has been advocated by many in our community as a crucial component of sharing your agent-based model. Documentation allows people to understand your model and build upon it. Therefore, for the good of the scientific process and the advancement of agent-based modeling we should provide good documentation.

But, I would like to argue, there is an equally important and less altruistic reason to document your agent-based model. Documentation plays a critical role in the continued development of your model. These days it is rare for only one researcher to work on the development of a model and as more faculty and students become involved with a project, the more difficult it is to record important information. It isn't uncommon for a graduate student to make critical calculations for a project and for that student to graduate without passing along important documentation for the next graduate student. As the number of interdisciplinary modeling projects increases, good documentation is critical for the completion of projects, not just the communication of projects to other scientists once they are finished.

The importance of good mid-model or mid-project documentation was made clear to me as I began assisting with an agent-based model this Fall. The agent-based model includes code from at least 4 different people, incorporates domain specific knowledge from dozens of other scientists and it has been modified to address very different questions over the years. Yet I have been able to orient myself within this project because of the careful documentation of the researchers that preceded me. From my past experience, this level of documentation in an ongoing project is rare. I encourage you all to think of documentation as a crucial part of the development of models, not just an important file to include when you archive your model.

Best regards,
Sean Bergin
CoMSES.Net Guest Editor
Arizona State University

CoMSES News

Updated CoMSES Education Page

We have launched a new and revamped education page! Have you ever wondered how to develop and publish FAIR+ computational models? Are you looking for concrete but gentle introductions to practices like model containerization or code versioning, Git, and GitHub? We have developed a series of multimedia and interactive tutorials that will help answer your questions. Check them out here!

Open Modeling Foundation Update

CoMSES.Net leadership Michael Barton and Allen Lee, along with other members of the Open Modeling Foundation Executive Committee received a two-year grant from the *Alfred P. Sloan Foundation* to support the initial development of the OMF. This grant of over $400,000 will support travel assistance for representatives to attend Members Council meetings, especially those from underrepresented groups and underfunded organizations, along with travel scholarships for early career scholars, and student support for the chairs of OMF working groups. Working Groups are currently setting up their activity agendas and the Executive Committee is planning the first Members Council annual meeting for March 2023, to be hosted in Leipzig Germany. CoMSES.Net is a member organization of the Open Modeling Foundation. For more information or to join a Working Group, see: https://openmodelingfoundation.org.

Board Elections

Elections for the CoMSES Executive Board are now open. All full CoMSES members have been sent a virtual ballot in a separate email (Want to become a full member? Edit your CoMSES user profile and check the box "Full Member" after reading and agreeing to the rights and responsibilities. You will be able to vote starting the next elections cycle). If you received your ballot for these elections, don't forget to submit your vote by January 15th, 2023!

Codebase Augmentation Pilot Project

The CoMSES Team is collecting computational models from different domains and manually curating them to adhere to good FAIR practices and building durable containerization recipes (i.e., Dockerfile and Singularity recipes with archival best practices in mind) for these models that support execution on any Docker or Singularity supported machine as well as the Open Science Grid. The current set of computational models being curated are available at https://github.com/comses-education#codebase-augmentation-pilot-project - if you would like to submit a computational model for consideration for our codebase augmentation pilot project, please let us know!

Update your CoMSES Profile!

Please consider keeping the CoMSES community informed by updating your user account on CoMSES Net! Let fellow researchers and modelers get to know you by including a biography, research interests, and/or institutional affiliation. You can navigate to your account in the upper right corner of the website to edit your profile and link your account to GitHub and ORCID. As

always, feel free to join the conversation by visiting the Forums tab or by starting a discussion on a specific model, event, or job posting.

Calendar of Events

Please follow the links to the local event organizers for the latest information or go to https://comses.net/events/ for a listing of all recent events. You can also subscribe to new events by following us on Twitter or subscribing to our RSS Events feed.

Upcoming Deadlines

MABS 2023 - The 24th International Workshop on Multi-Agent-Based Simulation
Dates: May 29-30, 2023
Submission Deadline: January 30, 2023

The 2023 Multi-Agent-Based Simulation (MABS) workshop is the 24th of the MABS series that began in 1998. Its scientific focus lies in the confluence of social sciences and multi-agent systems, with a strong application/empirical vein, and its emphasis is stressed on (i) exploratory agent based simulation as a principled way of undertaking scientific research in the social sciences and (ii) using social theories as an inspiration to new frameworks and developments in multi-agent systems.

2023 Annual Modeling and Simulation Conference
Dates: May 23-26, 2023
Paper Submission: January 8, 2023
Tutorials, Work-in-Progress Papers, PhD Colloquium Submission: March 20, 2023

Hosted by The Society for Modeling and Simulation International (SCS), the Annual Modeling and Simulation Conference (ANNSIM) is the flagship conference of SCS to cover state-of-the-art developments in Modeling & Simulation (M&S). We invite original contributions to the theory and practice of modeling and simulation in any scientific or engineering discipline. The conference includes keynote speeches presented by technology and industry leaders, technical sessions, professional development tutorials, as well as vendor exhibits. Scientists, engineers, managers, educators, and business professionals who develop or use M&S methodologies and tools are invited to participate and present original contributions. Accepted papers will be submitted for inclusion into ACM and IEEE Xplore subject to meeting ACM and IEEE Xplore's scope and quality requirements.

Model Library

Newly Reviewed

Fourteen models passed CoMSES's peer review process this quarter! Some are still unpublished while their companion publications undergo journal peer review; others are currently under review by CoMSES. A selection of the published, reviewed models includes:

- Routes & Rumours models the formation of migration routes under the assumption that migrants have limited geographical knowledge concerning the transit area and rely to a large degree on information obtained from other migrants. (Martin Hinsch and Jakub Bijak)
- The Archaeological Sampling Experimental Laboratory (tASEL) is an interactive tool for setting up and conducting experiments about sampling strategies for archaeological excavation, survey, and prospection. (Isaac Ullah)
- A Simple Agent-Based Spatial Model of the Economy: Tools for Policy simulates the evolution of artificial economies in order to understand the tax relevance of administrative boundaries in the quality of life of its citizens. The modeling involves the construction of a computational algorithm, which includes citizens, bounded into families; firms and governments; all of them interacting in markets for goods, labor and real estate. (B Furtado and Isaque Daniel Rocha Eberhardt)
- AgentEx-Meta unpacks and explores a potentially beneficial role of sharing metacognitive information within a group when making repeated decisions about common pool resource (CPR) use. (Nanda Wijermans and Helen Fischer)

New Model Uploads

Twenty-one new models were published in the CoMSES Model Library on a wide variety of topics that illustrate the depth and breadth of our community. These include:

- studying the effect of social influence on the spread of meat-eating behavior
- supporting oak tree management by representing the dynamics of oaks across their life stages and their competitors and consumers
- simulating the subcontracting process in the road freight system among three types of transport companies
- tracking truth in group discussions in the presence of bias
- comparing the effects of two alternative mechanisms of innovation development and diffusion in agriculture

These models and more can be discovered at the CoMSES Model Library - you can also keep up-to-date with newly published models on our Twitter and RSS feeds.

Most Downloaded Models

Published models were downloaded a total of 11,389 times this quarter, across 1018 unique codebases. Here are the top five:

1. Charging behaviour of electric vehicle drivers by Mart van der Kam, Annemijn Peters, Wilfried van Sark, Floor Alkemade (227 downloads)
2. Transport simulation in a real road network by Jiaqi Ge and Gary Polhill (201 downloads)
3. BEEHAVE Extension: Varroa mite control within Good Beekeeping Practice in Germany by Isabel Schödl, Jürgen Groeneveld, and Volker Grimm (147 downloads)
4. An agent-based simulation model of pedestrian evacuation based on Bayesian Nash Equilibrium by Yiyu Wang, Jiaqi Ge, and Alexis Comber (116 downloads)
5. An integrated socio-economic Agent-Based Modeling framework towards assessing farmers' decision making under water scarcity and varying utility function by Ghinwa

Harik (103 downloads)

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