

My name is Tyler Banks. Welcome to the brief introduction and QuickStart video guide to using SimAgent.

SimAgent was originally developed as a personal tool to quickly submit large-scale Neuron simulations to a local super computer, however, it has grown beyond its original use into a tool that has helped lower the barrier to entry for anyone wanting to take advantage of super computing resources.

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Traditionally, users log into super computers via SSH terminal and execute a series of commands to start their simulation. This requires a fair amount of background knowledge to be effective.

Services like the Neuroscience Gateway, or NSG, provided by the University of California at San Diego and Yale have significantly lowered the barrier to entry by providing a web-based simulation upload system. Through NSG, users upload their code, specify super computer parameters like tools and number of cores need and click start. The simulation runs and the user can then download the results. This is a very effective system that works well but it can turn into a time-consuming task to upload, run code, download, and analyze the results if you need to make incremental adjustments to your code.

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SimAgent reduces the time required to submit simulation jobs. The user simply specifies the local directory on their desktop containing their simulation code and essentially clicks start, that is, they must only work on their desktop.

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Using the point and click interface users can submit their code to NSG (for those of you who like to know, this happens internally using rest calls or to any server running SLURM through an SSH connection). Jobs are tracked until completion and the results are automatically downloaded back to the user's machine.

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In general, SimAgent follows the displayed process.

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To get started, SimAgent can be downloaded from [cyneuro.org](http://cyneuro.org), a cyber infrastructure resource provided by a group of researchers at the University of Missouri.

[GO TO CYNEURO.ORG]

Go to Projects -> Training Content -> SimAgent.

This website may have gone through changes since the creation of this video so you may have to look around a bit if you don't immediately see it.

The link will send you to an intermediate download page with documentation. Scroll down and click download. Something important to note is that this is a Windows only installer. For Linux and Mac you'll

need to download the source directly from GitHub and run SimAgent from a python shell. We'll go over this at the end of the video.

[GO TO DESKTOP Window with Download]

Once the download is complete, extract the files and navigate to the SimAgent directory. Double click the executable to start SimAgent.

You can optionally right click and add the link to your task bar for easy access.

Upon the first run it's important you update SimAgent to the latest version as features may have been added since the last binary was compiled. You only need to do this the first time you run SimAgent.

Go to Help -> Update and click Ok. Allow SimAgent to close and reopen the executable.

You're now ready to run your model.

[SEE QUICKSTART GUIDE FOR FURTHER READING INSTRUCTIONS]

[Switch Slide to github]

This concludes the basic usage. You can download the documentation as well as this transcript from the SimAgent git page displayed here.

[SWITCH SLIDE to contact info]

For assistance you can contact the author Tyler Banks directly at [tbanks@mail.missouri.edu](mailto:tbanks@mail.missouri.edu). Alternatively, if you encounter bugs or would like to see an additional feature added feel free to open an issue ticket on GitHub at <https://github.com/tjbanks/SimAgentMPI/>

[Switch Slide to references]

As promised, SimAgent can be run in Windows, Mac, or Linux via a python terminal. This can be a default python installation or through Anaconda.

Visit <https://github.com/tjbanks/SimAgentMPI/> and clone the repository or download here.

Extract the Zip files and open your terminal.

Change to the SimAgent directory and execute python SimAgent.py

You may need to install some dependencies if you run into issues, this can be done by running  
pip install -r requirements.txt

We hope you find SimAgent to be useful in your simulations, thank you for your time.

Tyler Banks, PhD Student