



Computational Simulation Scientist

Organization

The Center for Mind and Culture (CMAC) is a non-profit research center that innovates creative solutions for urgent social problems. We are committed to a radically interdisciplinary, non-partisan approach, and uniting the humanities, social sciences, and data sciences. CMAC mobilizes an international network of experts to develop cutting-edge tools and disseminate visionary insights to public and professional stakeholders. We aim to deepen understanding of complex adaptive social systems in order to help change agents be more effective.

Position

Applying computational and data-science methods to fundamental research questions in cognitive neuroscience is vital for deepening human self-understanding. While some invent the next great widget and others figure out how to sell it faster and cheaper, CMAC is committed to working with talented researchers who want to apply their skill sets to the dual challenge of understanding the human condition and promoting human good.

This term-limited position is funded by a research grant on the Cognitive Neuroscience of Religion. A central task of this position is computational simulation of the REM-Theta system, its involvement in creating supernatural-agent cognitions, its disruption in neuropsychiatric disorders, and its entanglement in interpersonal and cultural dynamics. A small collaborative research group will coordinate activities and build models, drawing on subject-matter experts as needed. The computational modeling activities are conducted within the Center for Mind and Culture in Boston under the leadership of Prof. Wesley J. Wildman (PI on a subcontract). The larger team is led by Prof. Patrick McNamara (Northcentral University) and Prof. Jordan Grafman (Northwestern University), who are co-PIs on the funded research project.

The successful candidate will be expert in computational modeling and simulation using both system-dynamics and agent-based models. Neural modeling expertise is helpful but not required for this position as the modeling occurs at the relatively high level of neural systems and associated cognitions and behaviors. Other requirements are statistical data analysis, participation in online study design and execution, documenting procedures, participation in team meetings, presenting findings at workshops and conferences, and writing up results for publication.

The position may be done remotely or in Boston and will begin as soon as April 1, 2022.

Minimum qualifications

- Expert-level abilities in computational modeling and simulation using both system-dynamics and agent-based models
- Proficiency interpreting a variety of technical instructions in mathematical or diagram form and dealing with abstract and concrete variables
- Ability to read, analyze, and interpret periodicals, professional journals, technical procedures, and governing body regulations
- Ability to define problems, collect data, establish facts, and draw valid conclusions

- Strong organizational and communication skills in English, with a proven ability to provide timely, accurate information on a variety of academically oriented subjects to both internal and external constituents
- Ability to handle a diversity of details in order to make informed and responsive decisions

Preferred qualifications

- Passion for using data science methods for the good of communities, including those affected by neuropsychiatric disorders and interpersonal and cultural conflict
- Experience working in a technology-driven institution
- Proven ability to communicate research results clearly and concisely in verbal and written form
- Strong analytical and critical thinking skills
- Experience in neural modeling
- Experience with modeling software such as AnyLogic, NetLogo, or Stella Architect; data-analytics tools such as R and Python; and statistics packages (STATA or SPSS)
- Proficient with the Microsoft Office suite

Education and experience

The successful candidate may be from one of the following backgrounds.

- A computational social scientist with a doctorate in psychology, neuroscience, religious studies, data science, or related fields
- Someone with a doctorate related to computational simulation who wants to apply those established skills to the cognitive neuroscience of religion
- Someone without the PhD but expert in computational simulation and data science, with an interest in cognitive neuroscience of religion
- Someone with equivalent industry experience consistent with the work required

To apply, please email a resume and a list of references to admin@mindandculture.org, along with a cover letter and links to any materials that you have created or co-created. The Center for Mind and Culture is an Equal Opportunity Employer.