

# Stanford

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## Rosa Cao

Associate Professor of Philosophy

### Bio

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#### ACADEMIC APPOINTMENTS

- Associate Professor, Philosophy
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)
- Member, Wu Tsai Neurosciences Institute

#### PROGRAM AFFILIATIONS

- Symbolic Systems Program

### Teaching

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#### COURSES

##### 2025-26

- Philosophy of Cognitive Science and Artificial Intelligence: PHIL 366C (Win)
- Philosophy of Neuroscience: PHIL 167D, PHIL 267D, SYMSYS 167D (Win)
- Why Games Matter: The Philosophy of Play: PHIL 14N (Spr)

##### 2024-25

- Why College? Your Education and the Good Life: COLLEGE 101 (Aut)

##### 2023-24

- Philosophy and Science Fiction: PHIL 7N (Win)
- Philosophy of Neuroscience: PHIL 167D, PHIL 267D, SYMSYS 167D (Win)

#### STANFORD ADVISEES

##### Doctoral Dissertation Reader (AC)

Marianna Bible, Jacqueline Harding, Lara Spencer

##### Doctoral Dissertation Advisor (AC)

Mariel Goddu

### Publications

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#### PUBLICATIONS

- **Assessing the landscape of representational concepts: Commentary on Favela and Machery** *MIND & LANGUAGE*  
Cao, R.  
2025
- **Explanatory models in neuroscience, Part 1: Taking mechanistic abstraction seriously** *COGNITIVE SYSTEMS RESEARCH*

- Cao, R., Yamins, D.  
2024; 87
- **Explanatory models in neuroscience, Part 2: Functional intelligibility and the contravariance principle** *COGNITIVE SYSTEMS RESEARCH*  
Cao, R., Yamins, D.  
2024; 85
  - **Neural Decoding, the Atlantis Machine, and Zombies** *PHILOSOPHICAL PERSPECTIVES*  
Cao, R., Warren, J.  
2023
  - **Mental representation, "standing-in-for", and internal models** *PHILOSOPHICAL PSYCHOLOGY*  
Cao, R., Warren, J.  
2023
  - **Multiple realizability and the spirit of functionalism** *SYNTHESE*  
Cao, R.  
2022; 200 (6)
  - **Putting representations to use** *SYNTHESE*  
Cao, R.  
2022; 200 (2)
  - **Crowding out Memetic Explanation** *PHILOSOPHY OF SCIENCE*  
Cao, R.  
2020; 87 (5): 1160–71
  - **New Labels for Old Ideas: Predictive Processing and the Interpretation of Neural Signals** *REVIEW OF PHILOSOPHY AND PSYCHOLOGY*  
Cao, R.  
2020
  - **Modest and immodest neural codes: Can there be modest codes?** *The Behavioral and brain sciences*  
Cao, R. n., Rathkopf, C. n.  
2019; 42: e221
  - **COMPUTATIONAL EXPLANATIONS AND NEURAL CODING** *ROUTLEDGE HANDBOOK OF THE COMPUTATIONAL MIND*  
Cao, R.  
edited by Sprevak, M., Colombo, M.  
2019: 283–96
  - **Content in Simple Signalling Systems.** *The British journal for the philosophy of science*  
Shea, N., Godfrey-Smith, P., Cao, R.  
2018; 69 (4): 1009–35
  - **Signaling in the Brain: In Search of Functional Units**  
Cao, R.  
UNIV CHICAGO PRESS.2014: 891–901
  - **A teleosemantic approach to information in the brain** *BIOLOGY & PHILOSOPHY*  
Cao, R.  
2012; 27 (1): 49–71
  - **The hemo-neural hypothesis: On the role of blood flow in information processing** *JOURNAL OF NEUROPHYSIOLOGY*  
Moore, C. I., Cao, R.  
2008; 99 (5): 2035–47