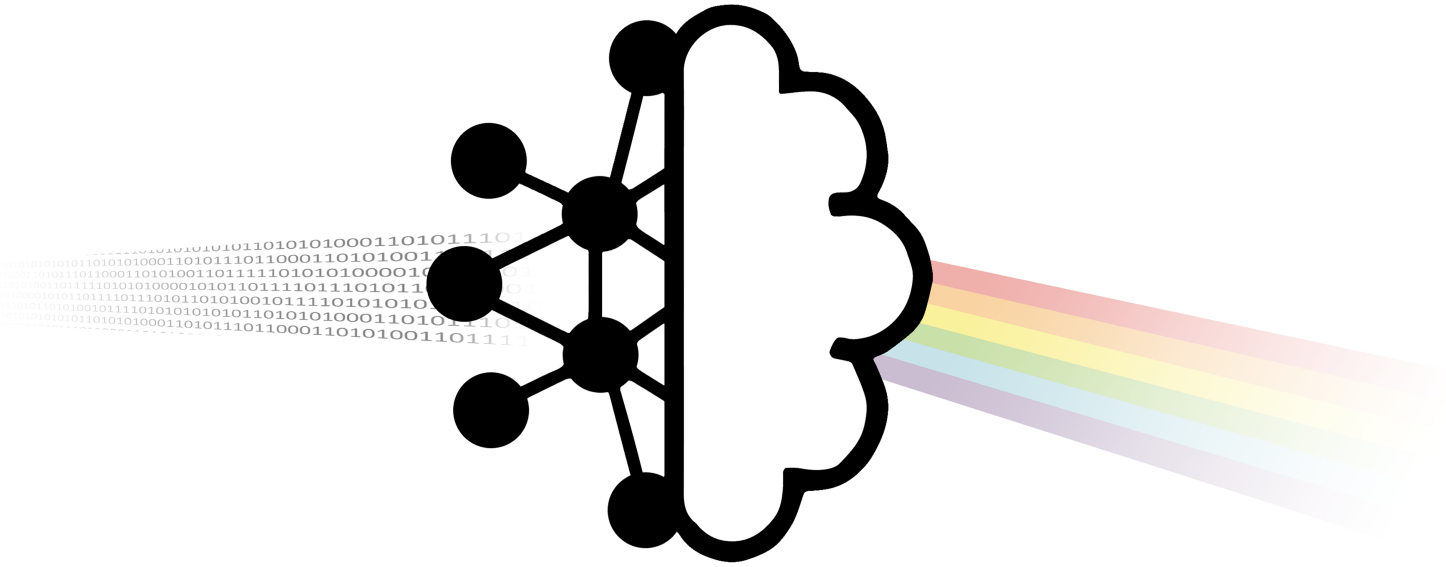
The Philosophy of Deep Learning

March 24-26 2023 · New York University



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COLUMBIA UNIVERSITY
Presidential Scholars in Society and Neuroscience

NYU CENTER FOR MIND, BRAIN, AND CONSCIOUSNESS

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About

The Philosophy of Deep Learning is a two-day conference (March 25-26th) plus pre-conference debate (March 24th) on the philosophy of deep learning, organized by Ned Block (New York University), David Chalmers (New York University) and Raphaël Millière (Columbia University).

The conference will explore current issues in AI research from a philosophical perspective, with particular attention to recent work on deep artificial neural networks. The goal is to bring together philosophers and scientists who are thinking about these systems in order to gain a better understanding of their capacities, their limitations, and their relationship to human cognition.

The conference will focus especially on topics in the philosophy of cognitive science (rather than on topics in AI ethics and safety). It will explore questions such as:

- What cognitive capacities, if any, do current deep learning systems possess?
- What cognitive capacities might future deep learning systems possess?
- What kind of representations can we ascribe to artificial neural networks?
- Could a large language model genuinely understand language?
- What do deep learning systems tell us about human cognition, and vice versa?
- How can we develop a theoretical understanding of deep learning systems?
- How do deep learning systems bear on philosophical debates such as rationalism vs empiricism and classical vs. nonclassical views of cognition.
- What are the key obstacles on the path from current deep learning systems to human-level cognition?

A pre-conference debate on Friday, March 24th will tackle the question “Do large language models need sensory grounding for meaning and understanding?”.

Registration

Attendance is free but requires registration. Please register in advance at phildeeplearning.github.io. Note that an Eventbrite ticket does not guarantee a seat.

Livestream

The conference will be livestreamed and recorded via Zoom on phildeeplearning.github.io/streaming. Please note that this is not a hybrid conference, and viewers on the livestream will not be able to ask questions or participate remotely.

Timetable

Friday, March 24th – Pre-Conference Debate

Cantor Film Center, Room 200, 36 East 8th Street

5:30–7:30	**Do Language Models Need Sensory Grounding for Meaning and Understanding?**		
YES	**Yann LeCun** NYU/Meta AI	**Brenden Lake** NYU	**Jacob Browning** NYU
NO	**Ellie Pavlick** Brown/Google AI	**David Chalmers** NYU	**Gary Lupyan** Wisconsin
7:30–8:30	**Reception (Silverstein Lounge, 32 Waverly Place)**		

Saturday, March 25th – Conference Day 1

19 West 4th Street, Room 101

ML: Main Lecture; ST: Symposium Talk; PC: Panel Contribution; PP: Poster Presentation.

9:00–9:30	**Coffee / Registration**		
9:30–10:40	ML	**Cameron Buckner** Houston	Moderate Empiricism and Machine Learning
10:40–11:00	**Coffee Break**		
11:00–12:10	ML	**Rosa Cao** Stanford	Are (Apparently) Successful DNN Models Also Genuinely Explanatory?
12:10–1:20	**Lunch Break**		
1:20–3:00	**Symposium: Representation in Deep Learning Systems**		
1:20–1:45	ST	**Fintan Mallory** Oslo	Teleosemantics for Neural Word Embeddings
1:45–2:10	ST	**Jacqueline Harding** Stanford	Do Probes in NLP Discover Representations?
2:10–2:35	ST	**Anders Søgaard** Copenhagen	How Language Models View Things
2:35–3:00	ST	**Tony Chen** MIT	Do Neural Networks Have Concepts?
3:00–4:15	**Poster Session**		
	PP	**Atoosa Kasirzadeh** University of Edinburgh	Do Large Language Models Understand Linguistic Meaning?
	PP	**Wai Keen Vong** New York University	Grounded Language Acquisition Through the Eyes and Ears of a Single Child
	PP	**Sreejan Kumar** Princeton University	Characterizing Abstraction Across Natural and Artificial Intelligence
	PP	**Will Merrill** New York University	Entailment Semantics Can Be Extracted From an Ideal Language Model
	PP	**Julia Minarik** University of Toronto	The Imaginative Shortcomings of Text-to-Image Generators
	PP	**Jared Moore** University of Washington	Language Models Understand Us, Poorly
	PP	**Nedah Nemati** Columbia University	Exploiting LLMs to Better Understand Assumptions in Social Science Methodologies
	PP	**Emin Orhan** New York University	How Much Human-Like Visual Experience Do Current Self-Supervised Learning Algorithms Need in Order to Achieve Human-Level Object Recognition?
	PP	**Stephan Pohl** New York University	The Information Gained by Processing a Signal

	PP	**Hokyung Sung** MIT	Predictive Models Are Not Enough for Human-like Cognition A Case Study from Developmental Psychology
	PP	**Justin Tiehen** University of Puget Sound	Passing Pearl's Mini-Turing Test
4:15–6:15	**Panel: What Can Deep Learning Do for Cognitive Science and Vice Versa?**		
4:15–4:25	PC	**Ishita Dasgupta** DeepMind	What can we learn from similarities between language model behavior and human behavior?
4:25–4:35	PC	**Nikolaus Kriegeskorte** Columbia	Neural Network Models as Mechanistic Explanations of Brain Information Processing
4:35–4:45	PC	**Tal Linzen** NYU/Google AI	What, if Anything, Can Large Language Models Teach Us About Human Language Acquisition?
4:45–4:55	PC	**Robert Long** Center for AI Safety	Why Cognitive Science Does Not Help AI Progress
4:55–5:05	PC	**Ida Momennejad** Microsoft Research	A Rubric for Human-like Agents and NeuroAI
5:05–6:15	**General Panel Discussion**		

Sunday, March 26th – Conference Day 2

19 West 4th Street, Room 101

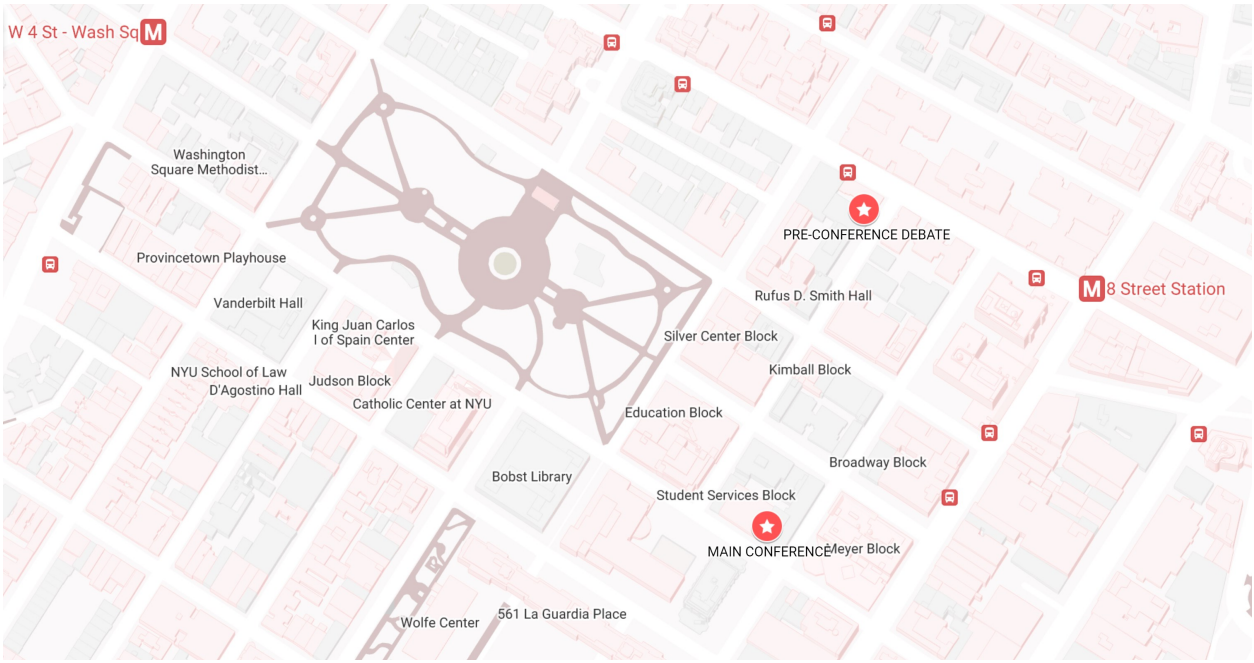
ML: Main Lecture; ST: Symposium Talk.

9:30–10:00	**Coffee**		
10:00–11:10	ML	**Nick Shea** London	The Importance of Logical Reasoning and Its Emergence in Deep Neural Networks
11:10–11:30	**Coffee Break**		
11:30–12:40	ML	**Raphaël Millière** Columbia	Compositionality in Deep Neural Networks
12:40–2:10	**Lunch Break**		
2:10–3:20	ML	**Grace Lindsay** NYU	Developing Neural Systems Understanding
3:20–4:00	**Coffee Break**		
4:00–5:40	**Symposium: Linguistic and Cognitive Capacities of Large Language Models**		
4:00–4:25	ST	**Anna Ivanova** MIT	Dissociating Language and Thought in Large Language Models: A Cognitive Perspective
4:25–4:50	ST	**Nuhu Osman Attah** Pittsburgh	Do Language Models Lack Communicative Intentions?
4:50–5:15	ST	**Patrick Butlin** Oxford	Functions, Content and Understanding in Large Language Models
5:15–5:40	ST	**Philippe Verreault-Julien** Eindhoven	Five Lessons Large Language Models Teach Us About Understanding

Useful Information

The **pre-conference debate** on Friday, March 24th will be held at the **Cantor Film Center**, Room 200, 36 East 8th Street.

The **main conference** on Saturday and Sunday, March 25-26th will be held at **19 West 4th Street**, Room 101.



Sponsors

The Philosophy of Deep Learning conference is jointly sponsored by the Presidential Scholars in Society and Neuroscience program at Columbia University and the Center for Mind, Brain, and Consciousness at New York University.

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