

# Eugene Y. S. Chua

## Areas of Interest

Areas of specialization Philosophy of physics, history and philosophy of science, epistemology.

Areas of competence Data ethics, metaphysics, philosophy of logic and mathematics.

## Employment

2024– **Nanyang Assistant Professor**, School of Humanities, Nanyang Technological University Singapore.

2023–2024 **Ahmanson Postdoctoral Instructor in Philosophy of Science**, Division of the Humanities and Social Sciences, California Institute of Technology.

## Education

2018–2023 **PhD Philosophy**, University of California San Diego.

**Dissertation Title:** Classical Thermodynamics Beyond the Classical Domain.

Dissertation Committee: Prof. Craig Callender (Chair), Prof. Kerry McKenzie, Prof. Eddy Keming Chen, Prof. Brian Keating (UCSD Physics)

Jan–Jul 2022 **Predoctoral Fellow**, Beyond Spacetime Group, University of Illinois Chicago.

2014–2017 **BA & MA (Cantab) Philosophy**, Wolfson College, University of Cambridge.

Part II First Class Honours (Rank: 2nd out of 38)

Part IB First Class Honours (Rank: 4th out of 42)

Part IA Second Class Honours, Upper Division (Rank: 14th out of 46)

## Publications

### Journal Articles (Peer-Reviewed)

Forthcoming Chua, Eugene Y. S. The Time in Thermal Time. *Journal for the General Philosophy of Science*, Forthcoming. Invited submission to the Special Issue on Time in the Foundations of Physics (eds. A. Oldofredi and C. Lopez). <https://philsci-archive.pitt.edu/23691/>.

2023 Chua, Eugene Y. S. T Falls Apart: On the Status of Classical Temperature in Relativity. *Philosophy of Science*, volume 90(5), 2023. <https://doi.org/10.1017/psa.2023.27>.

2022 Chua, Eugene Y. S. Degeneration and Entropy. *Kriterion – Journal of Philosophy*, 2022. Invited submission to the Special Issue on Lakatos’s Undone Work: The Practical Turn and the Division of Philosophy of Mathematics and Philosophy of Science (eds. S. Nagler, H. Pilin, and D. Sarikaya). <https://doi.org/10.1515/krt-2021-0032>.

2021 Chua, Eugene Y. S. and Craig Callender. No Time for Time from No-Time. *Philosophy of Science*, volume 88(5), page 1172–1184, 2021. <https://doi.org/10.1086/714870>.

2021 Chua, Eugene Y. S. Does von Neumann Entropy Correspond to Thermodynamic Entropy? *Philosophy of Science*, volume 88(1), page 145–168, 2021. <https://doi.org/10.1086/710072>.

- 2017 Chua, Eugene Y. S. An Empirical Route to Logical ‘Conventionalism’. In Alexandru Baltag, Jeremy Seligman, and Tomoyuki Yamada, editors, *Logic, Rationality, and Interaction*, pages 631–636, Berlin, Heidelberg, 2017. Springer Berlin Heidelberg. [https://doi.org/10.1007/978-3-662-55665-8\\_43](https://doi.org/10.1007/978-3-662-55665-8_43).

#### Conference Papers (Peer-Reviewed)

- 2020 Saito, Sean, Eugene Y. S. Chua, Nicholas Capel, and Rocco Hu. Improving LIME Robustness with Smarter Locality Sampling. 2020. 2nd Workshop on Adversarial Learning Methods for Machine Learning and Data Mining @ KDD2020, San Diego, USA. Available at: <https://arxiv.org/abs/2006.12302>.

#### Book Reviews

- 2023 Eugene Y. S. Chua. From classical to quantum, from physics to philosophy. *Metascience*, Nov 2023. Invited. <https://doi.org/10.1007/s11016-023-00935-9>.

#### Others

- 2024 Chua, Eugene Y.S., Bosco Garcia, and Harman Brah. LLM-powered psychiatry – from back to front. <https://techpolicy.caltech.edu/2024/07/16/llm-powered-psychiatry-from-back-to-front/>, July 2024. The Blog of the Linde Center for Science, Society, and Policy, California Institute of Technology.

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### In Preparation

- Putting Pressure under Pressure: On the Status of the Classical Pressure in Relativity Relativistic Locality from Electromagnetism to Quantum Field Theory (with Chip Sebens). (Invited submission to OUP collected volume “Locality and the Many-Worlds Interpretation” edited by Alyssa Ney.)
- Decoherence, Branching and the Born Rule in a Mixed-State Everettian Multiverse (with Eddy Keming Chen, under review)
- Interpreting the Tolman Effect (with Craig Callender)
- LLM-Powered Psychiatry, from Back to Front (with Bosco Garcia and Harman Brah)
- Do Black Holes Evaporate? (under review)
- Check, Please: Asymptotic Reasoning and De-Idealizations (with Yichen Luo)
- Two Myths of Formal Induction

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### Fellowships, Grants, & Awards

- 2024 **Nanyang Assistant Professorship Grant**, *Nanyang Technological University, Singapore*. Awarded a start-up grant of SGD\$1,000,000 together with the Nanyang Assistant Professorship position. Selected from an open field of candidates, most of whom were from the sciences.
- 2023 **Inaugural Cohort of the 2023 Summer Training Program to Expand the AI and Data Ethics Research Community**, *The Ethics Institute, Northeastern University*.
- 2023 **Best Essay Prize for “The Time in Thermal Time”**, *Department of Philosophy, University of California San Diego*. Awarded for best essay submission by a graduate student in the Philosophy Department.
- 2022 **Mary B. Hesse Graduate Student Essay Award for “T Falls Apart: On the Status of Classical Temperature in Relativity”**, *Philosophy of Science Association*. Awarded to the best single-authored paper submitted by a graduate student as a contributed paper for the biennial meeting and accepted for publication in *Philosophy of Science* by the PSA Program Committee.

- 2022 **18th Robert K. Clifton Memorial Prize for “T Falls Apart: On the Status of Classical Temperature in Relativity”**, *Logic, Math, and Physics Graduate Conference 2022, University of Western Ontario*.  
Awarded for best paper in philosophy of physics presented at the LMP conference.
- 2022 **Pre-Doctoral Fellowship in the Philosophy of Quantum Gravity**, *Cosmology Beyond Spacetime Project funded by the Templeton Foundation, University of Illinois Chicago*.
- 2021 **Best Essay Prize for “Do Black Holes Evaporate?”**, *Department of Philosophy, University of California San Diego*.  
Awarded for best essay submission by a graduate student in the Philosophy Department.
- 2019–2020 **Data Analytic Governance and Accountability Summer Fellowship**, *Institute of Practical Ethics, University of California San Diego*.  
Awarded by the Institute for the 2019-2020 project “Improving LIME Robustness with Smarter Locality Sampling” in collaboration with Singaporean and Japanese data scientists.
- 2017 **Winifred Georgina Holgate Pollard Memorial Prize**.  
Awarded for having “achieved the most outstanding results” for the Part II Philosophy Tripos Exams in Cambridge.
- 2017 **Aporia Essay Prize for “Is Logic Empirical?”**.  
Awarded for best essay submission to the undergraduate journal *Aporia*, published by St. Andrew’s Philosophy Society.
- 2017 **Jennings Prize, Wolfson College**.  
Awarded for First Class Honours in the 2016-2017 Philosophy Part II Tripos Exams.
- 2016 **Jennings Prize, Wolfson College**.  
Awarded for First Class Honours in the 2015-2016 Philosophy Part IB Tripos Exams.
- 2014–2017 **Cambridge Commonwealth, European and International Trust (CCEIT) Scholarship**.

## Selected Talks and Conferences (Organised by Topic)

### **Relativistic Locality and Branching in Everettian Quantum Field Theory (Joint Work with Chip Sebens).**

- **2024:** Invited talk for workshop on the Many-Worlds Interpretation and Locality, New Orleans, Louisiana, USA

### **Putting Pressure Under Pressure: On the Status of Classical Pressure in Relativity.**

- **2024:** British Society for Philosophy of Science Annual Conference, United Kingdom
- **2024:** Invited talk for symposium “The Limits of Thermal Physics”, Philosophy of Science Association Biennial Conference, New Orleans, Louisiana, USA
- **2024:** Invited talk for workshop on foundations of thermodynamics, University of Western Ontario, Canada
- **2023:** Caltech Division of the Humanities and Social Sciences Brown Bag Seminar, Pasadena, USA

### **LLM-Powered Psychiatry, From Back to Front (Joint Work with Harman Brah and Bosco Garcia).**

- **2024:** TeXneCON 2024, Northeastern University, Boston, Massachusetts, USA
- **2024:** Medicine and Technology x UltraFest 2024 at UC Irvine Health, Orange, California, USA

### **Branching and the Born Rule in a Mixed-State Everettian Multiverse (Joint Work with Eddy Keming Chen).**

- **2024:** Philosophy of Physics Society Meeting at the American Philosophical Association Conference (Pacific Division), Portland, Oregon, USA
- **2022:** California Quantum Interpretation Network 2022 Meeting, Chapman University, Orange, California, USA

### **The Time in Thermal Time.**

- **2023:** Caltech Philosophy of Physics Group, Pasadena, California, USA
- **2023:** Philosophy of Time Society Group Meeting at the annual American Philosophical Association Conference (Eastern Division), Montreal, Canada
- **2022:** Invited talk for the Foundations of Physics @ Harvard Seminar Series, USA
- **2022:** Invited talk for the 2022 Lisbon-Lausanne Workshop: “On Time in the Foundations of Physics”, Portugal

### **Situating the Myth of Formal Induction.**

- **2023:** AI and Data Ethics Summer Institute 2023, Northeastern University, Boston, Massachusetts, USA
- **2023:** The Nature of Bias – Perspectives from Philosophy, Psychology, and Machine Learning, Claremont McKenna College, Claremont, California, USA

### **Time’s Emergence and Physical Coherence.**

- **2023:** European Philosophy of Science Association Biennial Conference 2023, Belgrade, Serbia
- **2023:** Society for the Metaphysics of Science Conference 2023, Halifax, Canada

### **T Falls Apart: On the Status of Classical Temperature in Relativity.**

- **2023:** Southern California Philosophy of Physics Group, Irvine, California, USA
- **2022:** Philosophy of Science Association Biennial Conference, Pittsburgh, Pennsylvania, USA
- **2022:** 22th Annual Philosophy of Logic, Math and Physics (LMP) Graduate Student Conference, University of Western Ontario, Canada
- **2022:** Annual Conference of the Philosophy of Physics Group of the German Physical Society (DPG), Heidelberg, Germany

### **Degeneration and Entropy.**

- **2022:** The Continuing Influence of Imre Lakatos’s Philosophy: a Celebration of the Centenary of his Birth (Lakatos@100), London School of Economics, United Kingdom
- **2021:** British Society for Philosophy of Science Annual Conference, United Kingdom
- **2020:** Masterclass: Lakatos’s Undone Work – The Practical Turn and the Division of Philosophy of Mathematics and Philosophy of Science, London, United Kingdom

### **Check, Please: De-idealizing De-idealization.**

- **2022:** Invited talk at the Undergraduate Philosophy Club, University of Illinois Chicago, Illinois, USA
- **2022:** Graduate Philosophy Colloquium, University of California San Diego, La Jolla, California, USA

### **Do Black Holes Evaporate?**

- **2021:** XXIV International Summer School in Philosophy of Physics – Black Holes and the Information Loss Paradox, Urbino, Italy
- **2021:** Graduate Philosophy Colloquium, University of California San Diego, La Jolla, California, USA

### **No Time for Time from No-Time (Joint Work with Craig Callender).**

- **2021:** Invited Talk for the Cosmology Beyond Spacetime project’s colloquium series (Remote)
- **2021:** Philosophy of Science Association Biennial Conference, Baltimore, Maryland, USA
- **2020:** Southern California Philosophy of Physics Group, Irvine, California, USA

### **Egalitarianism, Equipossibility, Equiprobability: An Old Problem for Pettigrew’s Argument for the Principle of Indifference.**

- **2021:** Philosophy of Science Association Biennial Conference, Baltimore, Maryland, USA

### **Improving LIME Robustness with Smarter Locality Sampling (with Sean Saito, Nicholas Capel and Rocco Hu).**

- **2020:** 2nd Workshop on Adversarial Learning Methods for Machine Learning and Data Mining @ KDD 2020, San Diego, California, USA

### **Indeterminism for the Nomological Approach to Bohmian Mechanics.**

- **2019:** European Philosophy of Science Association Biennial Conference 2019, Geneva, Switzerland

### **Does Von Neumann’s Entropy Correspond to Thermodynamic Entropy?**

- **2019:** Black Forest Summer School in Philosophy of Physics: The Nature of Entropy, Saig, Germany

### **Epistemic Accuracy and the Free Energy Principle.**

- **2019:** 93rd Joint Session of the Aristotelian Society and the Mind Association – Open Sessions, Durham, United Kingdom

### **The Verdict is Out: Against the Internal View of the Gauge/Gravity Duality.**

- **2018:** Philosophy of Science Association Biennial Conference, Seattle, Washington, USA

### **Is Logic Empirical? Logical ‘Conventionalism’ From an Empirical Perspective.**

- **2017:** 17th Annual Philosophy of Logic, Math and Physics (LMP) Graduate Student Conference, University of Western Ontario, Canada

### **The Price Ain’t Right: High Costs for Determinacy in Hale’s Semantics and Arithmetic Structuralism.**

- **2017:** Triennial International Conference of the Italian Society for Logic and Philosophy of Science (SILFS), University of Bologna, Italy
- **2017:** 91st Joint Session of the Aristotelian Society and the Mind Association – Open Sessions, University of Edinburgh, United Kingdom

### **Rehabilitating Deductive-Nomological Explanation.**

- **2016:** Open Minds XII Conference, University of Manchester, United Kingdom

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## Refereeing Work

Synthese.

British Journal for the Philosophy of Science (x2).

Foundations of Physics.

Journal for General Philosophy of Science.

Cambridge Elements in the Philosophy of Physics.

Timing and Time Perception.

Annals of Physics.

European Journal for Philosophy of Science.

European Physical Journal Plus.

Philosophy of Science.

Quantum Studies: Mathematics and Foundations.

Studies in History and Philosophy of Science (x2).

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## Other Service Roles

2024 **NTU Undergraduate Admissions Coordinator.**

2024 **NTU Academic Mentoring Scheme.**

Faculty Mentor for Philosophy Undergraduates

2024 **Philosophy of Science Association 2024, New Orleans, Louisiana, USA.**

Organizer – Symposium: “The Limits of Thermal Physics”

2023 **European Philosophy of Science Association 2023.**

Chair – Symposium: Physical Time

2023 **Society for the Metaphysics of Science Meeting 2023.**

Invited Commentator – “The Open Systems View and the Everett interpretation” by Stephan Hartmann (LMU Munich)

2023 **American Philosophical Association Pacific Division Meeting 2023.**

Chair – Invited Symposium: Philosophy of Time organized by Michael Nelson (UC Riverside)

2023 **American Philosophical Association Eastern Division Meeting 2023.**

Commentator – Symposium Paper “Time Unknown” by Ryan Olsen (UMass, Amherst)

2022–present **Department First-Year Mentorship Program.**

Graduate Mentor

- 2021 **WonderPhilosophy Workshop for Undergraduate Students.**  
Panelist
- 2020–2022 **University of California San Diego Department of Philosophy.**  
Graduate Representative
- 2018–2019 **University of California San Diego Graduate Student Association.**  
Departmental Representative
- 2015–2017 **British Undergraduate Philosophy Society.**  
President
- 2014–2017 **Cambridge Philosophy Faculty Staff-Student Committee.**  
Part IA/IB/II Student Representative

## Teaching

- Fall '24: **Instructor of Record (NTU)**, HY4122 – History and Philosophy of Space and Time.
- Spring '24: **Instructor of Record (Caltech)**, Hum/PI 41 – Knowledge and Reality.
- Winter '24: **Instructor of Record (Caltech)**, HPS/PI 124 – History & Philosophy of Space and Time.
- Summer '22: **Instructor of Record (UCSD)**, PHIL132 – Epistemology: On Scientific Knowledge.

## Teaching Assistantships

- Fall '22: **Teaching Assistant**, PHIL 12 – Scientific Reasoning (Prof. Karen Kovaka).
- Summer '22: **Instructor of Record**, PHIL132 – Epistemology: On Scientific Knowledge.
- Fall '21: **Teaching Assistant**, CAT1 – The Origins of Culture, Art, and Technology (Prof. Guillermo Algaze). Culture, Arts and Technology Writing Program, Sixth College.
- Summer '21: **Teaching Assistant**, PHIL173 – Topics in Bioethics (Dr. Ann Caroline Thresher).
- Spring '21: **Teaching Assistant**, CAT3 – Queering Climate Change (Prof. BT Werner). Culture, Arts and Technology Writing Program, Sixth College.
- Winter '21: **Teaching Assistant**, CAT2 – Contemporary Gothic Literature (Dr. Elizabeth Gumm). Culture, Arts and Technology Writing Program, Sixth College.
- Fall '20: **Teaching Assistant**, CAT125R – Public Rhetoric and Communication (Dr. Joe Bigham). Culture, Arts and Technology Writing Program, Sixth College.
- Summer '20: **Teaching Assistant**, CAT125R – Public Rhetoric and Communication (Dr. Jennifer Marchisotto). Culture, Arts and Technology Writing Program, Sixth College.
- Summer '20: **Teaching Assistant**, PHIL27 – Ethics and Society (Henry Argetsinger).
- Spring '20: **Teaching Assistant**, CAT3 – Narratives of Apocalypse and the Aftermath (Dr. Elizabeth Gumm). Culture, Arts and Technology Writing Program, Sixth College.
- Winter '20: **Teaching Assistant**, CAT2 – The Emergence of Cities and States (Prof. Guillermo Algaze). Culture, Arts and Technology Writing Program, Sixth College.
- Fall '19: **Teaching Assistant**, CAT1 – The Transformation of Cities (Prof. Stanley Chodorow). Culture, Arts and Technology Writing Program, Sixth College.
- Summer '19: **Teaching Assistant**, PHIL28 – Ethics and Society (Dr. Kathryn Joyce).
- Fall '18: **Teaching Assistant**, PHIL146 – Philosophy of Physics (Prof. Craig Callender).

## Graduate Courses Taken

### Metaphysics and Epistemology

- Spring '19: **PHIL 232: Truth as a Human Value**, Gila Sher.
- Fall '19: **PHIL 285: Naturalism and Naturalistic Metaphysics**, Kerry McKenzie.
- Fall '19: **PHIL 232: Topics in Recent Epistemology**, Jennifer Carr.

Fall '18: **PHIL 232: Formal Epistemology**, Jennifer Carr.

Fall '18: **PHIL 285: Self/No-Self**, Michael Hardimon.

[History and Philosophy of Science](#)

Fall '22: **PHYS 245: Philosophy of Climate Change**, Karen Kovaka.

Fall '21: **PHIL 260: Data Ethics**, David Danks.

Spring '20: **PHIL 285: The Arrows of Time**, Eddy Keming Chen.

Winter '20: **PHIL 285: History and Philosophy of Science Seminar in Biomedical and Social Sciences, with Special Attention to Race and Psychiatry**, Nancy Cartwright.

Winter '19: **PHIL 285: Middle-Range Theory**, Nancy Cartwright.

Winter '19: **PHIL 209D: Introduction to Science Studies II**, Nancy Cartwright.

[Physics and Science](#)

Winter '21: **PHYS 225B: General Relativity**, George M. Fuller.

Fall '20: **PHYS 225A: General Relativity**, George M. Fuller.

Spring '19: **SIOC 209: The Predictive Mind**, BT Werner.

[Moral Philosophy](#)

Spring '19: **PHIL 260: Compensation and Restitution**, Saba Bazargan-Forward.

Fall '18: **PHIL 200: Moral Responsibility**, Dana Nelkin.

[History of Philosophy](#)

Winter '20: **PHIL 285: Kant's Metaphysics of Morals**, Lucy Allais.

Winter '19: **PHIL 201A: Core Course in Ancient History – Individual, Community, and the Common Good**, David O. Brink, Donald Rutherford, and Clinton Tolley.

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## References

**Prof. Craig Callender**, *University of California, San Diego*, Department of Philosophy, Professor.

**Email:** [ccaller@ucsd.edu](mailto:ccaller@ucsd.edu)

**Telephone:** +1-858-822-4911

**Prof. Kerry McKenzie**, *University of California, San Diego*, Department of Philosophy, Associate Professor.

**Email:** [kmckenzie@ucsd.edu](mailto:kmckenzie@ucsd.edu)

**Telephone:** +1-858-534-2566

**Prof. Nick Huggett**, *University of Illinois Chicago*, Department of Philosophy, LAS Distinguished Professor.

**Email:** [huggett@uic.edu](mailto:huggett@uic.edu)

**Telephone:** +1-312-996-3022

**Prof. Eddy Keming Chen**, *University of California, San Diego*, Department of Philosophy, Assistant Professor.

**Email:** [eddykemingchen@ucsd.edu](mailto:eddykemingchen@ucsd.edu)

**Telephone:** +1-858-534-9281

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