

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.

Education

- 2018–present **PhD Philosophy**, *University of California San Diego*.
Dissertation Title: Classical Thermodynamical Concepts 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. T Falls Apart: On the Status of Classical Temperature in Relativity. *Philosophy of Science*, volume 90(5). Preprint available at: <http://philsci-archive.pitt.edu/20744/>.
- 2022 Chua, Eugene Y. S. Degeneration and Entropy. *Kriterion – Journal of Philosophy*. 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. <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. <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. 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. 2nd Workshop on Adversarial Learning Methods for Machine Learning and Data Mining @ KDD2020, San Diego, USA. Available at: <https://arxiv.org/abs/2006.12302>.

In Preparation

Egalitarianism, Equipossibility, Equiprobability: An Old Problem for Pettigrew's New Argument for the Principle of Indifference (Revise and resubmit, under review in *Synthese*)

A Problem of Indeterminism for the Humean Nomological Approach to Bohmian Mechanics (under review in *Studies in History and Philosophy of Science*)

The Time in Thermal Time (revise and resubmit, under review at *Philosophy of Science*)

Branching and the Born Rule in a Mixed-State Everettian Multiverse (with Eddy Keming Chen)

Do Black Holes Evaporate?: On Energy Conservation, Black Holes, and Black Hole Evaporation

A Thick Material Theory of Machine Learning

Check, Please: De-idealizing De-idealization

Fellowships, Grants, & Awards

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 **Graduate Student 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)

A Thick Material Theory of Machine Learning.

• **2023:** The Nature of Bias – Perspectives from Philosophy, Psychology, and Machine Learning, Claremont McKenna College, Claremont, California, USA

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

- **2022:** California Quantum Interpretation Network 2022 Meeting, Chapman University, Orange, California, USA

The Time in Thermal Time.

- **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
- **2022:** Philosophy of Time Society Group Meeting at the annual American Philosophical Association Conference (Eastern Division), Montreal, Canada

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

- **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

Refereeing Work

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.

Other Service Roles

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

2022–present **Graduate Application Mentorship Program (GradAMP).**

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 and 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.

References

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

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

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