

Siddhartha Bhattacharjee

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🌀 Booodaness

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🌐 <https://booodaness.github.io/tempus-spatium/>



Education

- 2022-2026 **B.Sc. (Hons), University of Waterloo** Mathematical Physics, minoring in Pure Mathematics, Philosophy
- 2020-2022 **C.B.S.E., Freedom International School (Bangalore, India)** Physics, Chemistry, Mathematics, Computer Science
- 2014-2020 **I.C.S.E., Bethany High School (Bangalore, India)** Physics, Chemistry, Mathematics, Computer Science, Biology, Geography, History, Civics, English, Hindi

Skills

- Languages **Strong reading, writing and speaking competency in English, Hindi and Bengali.**
- Coding **LaTeX, Markdown, Python, Sage**
- Frameworks **SymPy, NumPy, Conda, Jupyter, Pweave, Reveal.js**
- Web Dev **HTML, Liquid, CSS, Jekyll, GitHub Pages**
- Knowledge bases **Zotero, Overleaf, PubPub, Notion, Obsidian, Discord, Mastodon, Reddit**
- Misc. **Blogging, LaTeX note-taking, static web dev, personal research in mathematical physics**

Projects

Reports

- 1 A. Cormier, S. Bhattacharjee, and Z. Chen, "Analysis of the three-body problem," 2023. [🌐 URL: https://booodaness.github.io/tempus-spatium/assets/pdf/posts/2024-01-28-analysis-three-body-problem/final.pdf.](https://booodaness.github.io/tempus-spatium/assets/pdf/posts/2024-01-28-analysis-three-body-problem/final.pdf)

Websites

- 1 S. Bhattacharjee. "Zotsite." (2023), [🌐 URL: https://booodaness.github.io/zotsite/.](https://booodaness.github.io/zotsite/)
- 2 S. Bhattacharjee. "Tempus spatium." (2021), [🌐 URL: https://booodaness.github.io/tempus-spatium/.](https://booodaness.github.io/tempus-spatium/)

Notes

- 1 C. of Scientific-Notes, *Scientific notes*, Mar. 2022. [🌐 URL: https://github.com/Booodaness/Scientific-Notes.](https://github.com/Booodaness/Scientific-Notes)

Personal Research

Conference Papers

- 1 S. Bhattacharjee, "A closer look at quantum measurements (slides)," GitHub Pages, Aug. 2023. [🌐 URL: https://booodaness.github.io/tempus-spatium/closer-look-quantum-measurements/.](https://booodaness.github.io/tempus-spatium/closer-look-quantum-measurements/)

- 2 S. Bhattacharjee, "Applying the klein-gordon theory to gravitation (slides)," GitHub Pages, Feb. 2023.
🔗 URL: <https://boodaness.github.io/tempus-spatium/applying-klein-gordon-theory-gravitation/>.
- 3 S. Bhattacharjee, "Bundles in classical gauge field theory (slides, in progress)," GitHub Pages, Jun. 2023.
🔗 URL: <https://boodaness.github.io/tempus-spatium/bundles-classical-gauge-field-theory/>.








Articles

- 1 S. Bhattacharjee, "A closer look at quantum measurements: Part 2.1 (stern-gerlach experiments)," *Tempus Spatium*, May 2024. 🔗 URL: <https://boodaness.github.io/tempus-spatium/closer-look-quantum-measurements-part-2.1/>.
- 2 S. Bhattacharjee, "A functional treatment of the direct product of groups," *Tempus Spatium*, May 2024.
🔗 URL: <https://boodaness.github.io/tempus-spatium/functional-treatment-direct-products-groups/>.
- 3 S. Bhattacharjee, "Qualia in temporal naturalism (part 1: Towards cosmoprotopsychism)," *Tempus Spatium*, Aug. 2024. 🔗 URL: <https://boodaness.github.io/tempus-spatium/qualia-temporal-naturalism/>.
- 4 S. Bhattacharjee, "Qualia in temporal naturalism (part 2: Some philosophical puzzles)," *Tempus Spatium*, Aug. 2024. 🔗 URL: <https://boodaness.github.io/tempus-spatium/qualia-temporal-naturalism-puzzles/>.
- 5 S. Bhattacharjee, "The question of 'transitory worlds' in plato's metaphysics: Part 1," *Tempus Spatium*, May 2024. 🔗 URL: <https://boodaness.github.io/tempus-spatium/transitory-worlds-plato-metaphysics/>.
- 6 S. Bhattacharjee, "A brief geometric analysis of harmonic oscillators: Part 3 (matrix exponentials)," *Tempus Spatium*, Jan. 2023. 🔗 URL: <https://boodaness.github.io/tempus-spatium/geometric-analysis-harmonic-oscillators-part-3/>.
- 7 S. Bhattacharjee, "Homogeneity from additivity for linear operators on a real vector space," *Tempus Spatium*, Jan. 2023. 🔗 URL: <https://boodaness.github.io/tempus-spatium/homogeneity-from-additivity-linear-operators-real-vector-space/>.
- 8 S. Bhattacharjee, "A brief geometric analysis of harmonic oscillators," *Tempus Spatium*, Jan. 2022. 🔗 URL: <https://boodaness.github.io/tempus-spatium/geometric-analysis-harmonic-oscillators/>.
- 9 S. Bhattacharjee, "Algebra done tensorially: Part 3 (complex numbers and quaternions)," *Tempus Spatium*, Feb. 2022. 🔗 URL: <https://boodaness.github.io/tempus-spatium/complex-numbers-quaternions/>.
- 10 S. Bhattacharjee, "Combining valid solutions into new ones in classical field theory," *Tempus Spatium*, Apr. 2022. 🔗 URL: <https://boodaness.github.io/tempus-spatium/combining-solutions-classical-field-theory/>.
- 11 S. Bhattacharjee, "Components of covariant derivative of a tensor field," *Tempus Spatium*, Mar. 2022.
🔗 URL: <https://boodaness.github.io/tempus-spatium/components-covariant-derivative-tensor-field/>.
- 12 S. Bhattacharjee, "Conservation of mass in classical mechanics," *Tempus Spatium*, Mar. 2022. 🔗 URL: <https://boodaness.github.io/tempus-spatium/conservation-mass-classical-mechanics/>.
- 13 S. Bhattacharjee, "Deriving the lagrangian density for newtonian gravitation," *Tempus Spatium*, Dec. 2022. 🔗 URL: <https://boodaness.github.io/tempus-spatium/deriving-lagrangian-newtonian-gravitation/>.
- 14 S. Bhattacharjee, "Gauge invariance in classical field theory," *Tempus Spatium*, May 2022. 🔗 URL: <https://boodaness.github.io/tempus-spatium/gauge-invariance-classical-field-theory/>.



- 15 S. Bhattacharjee, "Linearity of classical gauge fields," *Tempus Spatium*, May 2022. [URL: https://boodaness.github.io/tempus-spatium/linearity-classical-gauge-fields/](https://boodaness.github.io/tempus-spatium/linearity-classical-gauge-fields/).
- 16 S. Bhattacharjee, "Scalar field lagrangian from symmetry considerations: Part 2 (gauge invariance)," *Tempus Spatium*, Aug. 2022. [URL: https://boodaness.github.io/tempus-spatium/scalar-field-lagrangian-symmetry-considerations-part-2/](https://boodaness.github.io/tempus-spatium/scalar-field-lagrangian-symmetry-considerations-part-2/).
- 17 S. Bhattacharjee, "Symplectic forms from poisson brackets," *Tempus Spatium*, Jul. 2022. [URL: https://boodaness.github.io/tempus-spatium/symplectic-forms-poisson-brackets/](https://boodaness.github.io/tempus-spatium/symplectic-forms-poisson-brackets/).
- 18 S. Bhattacharjee, "The real reason nothing travels faster than light," *Tempus Spatium*, Apr. 2022. [URL: https://boodaness.github.io/tempus-spatium/real-reason-nothing-travels-faster-than-light/](https://boodaness.github.io/tempus-spatium/real-reason-nothing-travels-faster-than-light/).
- 19 S. Bhattacharjee, "Thomson's lamp and multivaluedness," *Tempus Spatium*, Feb. 2022. [URL: https://boodaness.github.io/tempus-spatium/thomson-lamp-multivaluedness/](https://boodaness.github.io/tempus-spatium/thomson-lamp-multivaluedness/).
- 20 S. Bhattacharjee, "A tale of two quantities," *Tempus Spatium*, Oct. 2021. [URL: https://boodaness.github.io/tempus-spatium/tale-two-quantities/](https://boodaness.github.io/tempus-spatium/tale-two-quantities/).
- 21 S. Bhattacharjee, "Factorials as invariant points," *Tempus Spatium*, Nov. 2021. [URL: https://boodaness.github.io/tempus-spatium/factorials-invariant-points/](https://boodaness.github.io/tempus-spatium/factorials-invariant-points/).
- 22 S. Bhattacharjee, "Harmonic oscillators in scalar field theory," *Tempus Spatium*, Nov. 2021. [URL: https://boodaness.github.io/tempus-spatium/harmonic-oscillators-scalar-field-theory/](https://boodaness.github.io/tempus-spatium/harmonic-oscillators-scalar-field-theory/).
- 23 S. Bhattacharjee, "Scalar field lagrangian from symmetry considerations," *Tempus Spatium*, Dec. 2021. [URL: https://boodaness.github.io/tempus-spatium/scalar-field-lagrangian-symmetry-considerations/](https://boodaness.github.io/tempus-spatium/scalar-field-lagrangian-symmetry-considerations/).
- 24 S. Bhattacharjee, "The impossible cut," *Tempus Spatium*, Oct. 2021. [URL: https://boodaness.github.io/tempus-spatium/impossible-cut/](https://boodaness.github.io/tempus-spatium/impossible-cut/).

Miscellaneous Experience



Achievements and Leadership

- 2017-2020  **Literary Prefect**, Bethany High School (Bangalore, India).
- 2020  **Excellent Scientific Temper**, Bethany High School (Bangalore, India).
- 2020, 2019  **1st in Debate**, Bethany High School (Bangalore, India).
- 2015-2019  **Excellence in Academics**, Bethany High School (Bangalore, India).
- 2019, 2018, 2016  **1st in Creative Writing**, Bethany High School (Bangalore, India).
- 2019, 2017  **Very Good Orator**, Bethany High School (Bangalore, India).
- 2019, 2017, 2016  **Best All Rounder**, Bethany High School (Bangalore, India).

Certification

- 2018  **Dan (First Black Belt)**. Shorin-ryu Shorinkan Karate (Bangalore, India).
- 2015-2020  **Fundraising Activities**. Bethany High School (Bangalore, India).

Hobbies

-  **Music**. Electric guitar, acoustic guitar, classical guitar and piano covers and compositions.
-  **Writing**. Articles, essays, poetry, journaling, short stories.

Miscellaneous Experience (continued)

- **Reading.** Science fiction, fiction, classics, philosophy, anthropology, history of rock and metal music, other non-fiction.
- **Physical activities.** Rock climbing, hiking, biking, gymming, tennis, badminton, swimming.