

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, "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/>.
- 3 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/>.
- 4 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/>.
- 5 S. Bhattacharjee, "A brief geometric analysis of harmonic oscillators," *Tempus Spatium*, Jan. 2022.  URL:
<https://boodaness.github.io/tempus-spatium/geometric-analysis-harmonic-oscillators/>.
- 6 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/>.
- 7 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/>.
- 8 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/>.
- 9 S. Bhattacharjee, "Conservation of mass in classical mechanics," *Tempus Spatium*, Mar. 2022.  URL:
<https://boodaness.github.io/tempus-spatium/conservation-mass-classical-mechanics/>.
- 10 S. Bhattacharjee, "Deriving the lagrangian density for newtonian gravitation," *Tempus Spatium*, Dec. 2022.  URL:
<https://boodaness.github.io/tempus-spatium/deriving-lagrangian-newtonian-gravitation/>.
- 11 S. Bhattacharjee, "Gauge invariance in classical field theory," *Tempus Spatium*, May 2022.  URL:
<https://boodaness.github.io/tempus-spatium/gauge-invariance-classical-field-theory/>.
- 12 S. Bhattacharjee, "Linearity of classical gauge fields," *Tempus Spatium*, May 2022.  URL:
<https://boodaness.github.io/tempus-spatium/linearity-classical-gauge-fields/>.
- 13 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/>.
- 14 S. Bhattacharjee, "Symplectic forms from poisson brackets," *Tempus Spatium*, Jul. 2022.  URL:
<https://boodaness.github.io/tempus-spatium/symplectic-forms-poisson-brackets/>.

- 15 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/>.
- 16 S. Bhattacharjee, "Thomson's lamp and multivaluedness," *Tempus Spatium*, Feb. 2022.  URL: <https://boodaness.github.io/tempus-spatium/thomson-lamp-multivaluedness/>.
- 17 S. Bhattacharjee, "A tale of two quantities," *Tempus Spatium*, Oct. 2021.  URL: <https://boodaness.github.io/tempus-spatium/tale-two-quantities/>.
- 18 S. Bhattacharjee, "Factorials as invariant points," *Tempus Spatium*, Nov. 2021.  URL: <https://boodaness.github.io/tempus-spatium/factorials-invariant-points/>.
- 19 S. Bhattacharjee, "Harmonic oscillators in scalar field theory," *Tempus Spatium*, Nov. 2021.  URL: <https://boodaness.github.io/tempus-spatium/harmonic-oscillators-scalar-field-theory/>.
- 20 S. Bhattacharjee, "Scalar field lagrangian from symmetry considerations," *Tempus Spatium*, Dec. 2021.  URL: <https://boodaness.github.io/tempus-spatium/scalar-field-lagrangian-symmetry-considerations/>.
- 21 S. Bhattacharjee, "The impossible cut," *Tempus Spatium*, Oct. 2021.  URL: <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.
- 📌 **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.