

Siddhartha Bhattacharjee

✉ s3bhatta@uwaterloo.ca

📄 Booodaness

🆔 0000-0001-9510-2066

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



Education

- 2022-2026 **B.Sc. (Hons), University of Waterloo** Mathematical Physics
- 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, 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. (2023), [🔗 URL: https://booodaness.github.io/zotsite/](https://booodaness.github.io/zotsite/).
- 2 S. Bhattacharjee. (2021), [🔗 URL: https://booodaness.github.io/tempus-spatium/](https://booodaness.github.io/tempus-spatium/).

Notes

- 1 C. of 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://booodaness.github.io/tempus-spatium/applying-klein-gordon-theory-gravitation/](https://booodaness.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/](https://boodaness.github.io/tempus-spatium/bundles-classical-gauge-field-theory/).








Articles

- 1 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/](https://boodaness.github.io/tempus-spatium/geometric-analysis-harmonic-oscillators-part-3/).
- 2 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/](https://boodaness.github.io/tempus-spatium/homogeneity-from-additivity-linear-operators-real-vector-space/).
- 3 S. Bhattacharjee, "The real reason nothing travels faster than light: Part 2 (dynamical interpretation)," *Tempus Spatium*, Jul. 2023. [URL: https://boodaness.github.io/tempus-spatium/real-reason-nothing-travels-faster-than-light-part-2/](https://boodaness.github.io/tempus-spatium/real-reason-nothing-travels-faster-than-light-part-2/).
- 4 S. Bhattacharjee, "A brief geometric analysis of harmonic oscillators," *Tempus Spatium*, Jan. 2022. [URL: https://boodaness.github.io/tempus-spatium/geometric-analysis-harmonic-oscillators/](https://boodaness.github.io/tempus-spatium/geometric-analysis-harmonic-oscillators/).
- 5 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/](https://boodaness.github.io/tempus-spatium/complex-numbers-quaternions/).
- 6 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/](https://boodaness.github.io/tempus-spatium/combining-solutions-classical-field-theory/).
- 7 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/](https://boodaness.github.io/tempus-spatium/components-covariant-derivative-tensor-field/).
- 8 S. Bhattacharjee, "Conservation of mass in classical mechanics," *Tempus Spatium*, Mar. 2022. [URL: https://boodaness.github.io/tempus-spatium/conservation-mass-classical-mechanics/](https://boodaness.github.io/tempus-spatium/conservation-mass-classical-mechanics/).
- 9 S. Bhattacharjee, "Deriving the lagrangian density for newtonian gravitation," *Tempus Spatium*, Dec. 2022. [URL: https://boodaness.github.io/tempus-spatium/deriving-lagrangian-newtonian-gravitation/](https://boodaness.github.io/tempus-spatium/deriving-lagrangian-newtonian-gravitation/).
- 10 S. Bhattacharjee, "Gauge invariance in classical field theory," *Tempus Spatium*, May 2022. [URL: https://boodaness.github.io/tempus-spatium/gauge-invariance-classical-field-theory/](https://boodaness.github.io/tempus-spatium/gauge-invariance-classical-field-theory/).
- 11 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/).
- 12 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/).
- 13 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/).
- 14 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/).
- 15 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/).
- 16 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/).



- 17 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/).
- 18 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/).
- 19 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/).
- 20 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

-  **Piano**. Neoclassical, orchestral, EDM covers, compositions.
-  **Writing**. Articles, poetry, journalling, short stories.
-  **Reading**. Science fiction, modern fiction, classics, philosophy, linguistics, anthropology, history of rock and metal music, other non-fiction.
-  **Physical activities**. Rock climbing, hiking, biking, gymming, badminton, swimming.