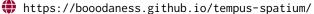
Siddhartha Bhattacharjee

s3bhatta@uwaterloo.ca

Booodaness

0000-0001-9510-2066





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

LYFX, 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, Lagar note-taking, static web dev, personal research in mathematical physics

Projects

Reports

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.

Websites

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

Notes

1 C. of Scientific-Notes, Scientific notes, Mar. 2022. • URL: https://github.com/Booodaness/Scientific-Notes.

Personal Research

Conference Papers

- S. Bhattacharjee, "A closer look at quantum measurements (slides)," GitHub Pages, Aug. 2023. URL: https://booodaness.github.io/tempus-spatium/closer-look-quantum-measurements/.
- S. Bhattacharjee, "Applying the klein-gordon theory to gravitation (slides)," GitHub Pages, Feb. 2023.

 Ourl:

https://booodaness.github.io/tempus-spatium/applying-klein-gordon-theory-gravitation/.

S. Bhattacharjee, "Bundles in classical gauge field theory (slides, in progress)," GitHub Pages, Jun. 2023.

Our URL: https://booodaness.github.io/tempus-spatium/bundles-classical-gauge-field-theory/.

Articles

- S. Bhattacharjee, "A closer look at quantum measurements: Part 2.1 (stern-gerlach experiments),"

 Tempus Spatium, May 2024. URL:

 https://booodaness.github.io/tempus-spatium/closer-look-quantum-measurements-part-2.1/.
- S. Bhattacharjee, "The question of 'transitory worlds' in plato's metaphysics: Part 1," *Tempus Spatium*, May 2024. URL: https://booodaness.github.io/tempus-spatium/transitory-worlds-plato-metaphysics/.
- S. Bhattacharjee, "A brief geometric analysis of harmonic oscillators: Part 3 (matrix exponentials)," *Tempus Spatium*, Jan. 2023. URL: https://booodaness.github.io/tempus-spatium/geometric-analysis-harmonic-oscillators-part-3/.
- S. Bhattacharjee, "Homogeneity from additivity for linear operators on a real vector space," *Tempus Spatium*, Jan. 2023. URL: https://booodaness.github.io/tempus-spatium/homogeneity-from-additivity-linear-operators-real-vector-space/.
- S. Bhattacharjee, "A brief geometric analysis of harmonic oscillators," *Tempus Spatium*, Jan. 2022. URL: https://booodaness.github.io/tempus-spatium/geometric-analysis-harmonic-oscillators/.
- S. Bhattacharjee, "Algebra done tensorially: Part 3 (complex numbers and quaternions)," *Tempus Spatium*, Feb. 2022. URL: https://booodaness.github.io/tempus-spatium/complex-numbers-quaternions/.
- S. Bhattacharjee, "Combining valid solutions into new ones in classical field theory," *Tempus Spatium*, Apr. 2022. URL: https://booodaness.github.io/tempus-spatium/combining-solutions-classical-field-theory/.
- S. Bhattacharjee, "Components of covariant derivative of a tensor field," *Tempus Spatium*, Mar. 2022.
 © URL: https://booodaness.github.io/tempus-spatium/components-covariant-derivative-tensor-field/.
- 9 S. Bhattacharjee, "Conservation of mass in classical mechanics," *Tempus Spatium*, Mar. 2022. **9** URL: https://booodaness.github.io/tempus-spatium/conservation-mass-classical-mechanics/.
- S. Bhattacharjee, "Deriving the lagrangian density for newtonian gravitation," *Tempus Spatium*, Dec. 2022. OURL: https://booodaness.github.io/tempus-spatium/deriving-lagrangian-newtonian-gravitation/.
- S. Bhattacharjee, "Gauge invariance in classical field theory," *Tempus Spatium*, May 2022. URL: https://booodaness.github.io/tempus-spatium/gauge-invariance-classical-field-theory/.
- S. Bhattacharjee, "Linearity of classical gauge fields," *Tempus Spatium*, May 2022. URL: https://booodaness.github.io/tempus-spatium/linearity-classical-gauge-fields/.
- S. Bhattacharjee, "Scalar field lagrangian from symmetry considerations: Part 2 (gauge invariance),"

 Tempus Spatium, Aug. 2022. URL: https://booodaness.github.io/tempus-spatium/scalar-field-lagrangian-symmetry-considerations-part-2/.
- S. Bhattacharjee, "Symplectic forms from poisson brackets," *Tempus Spatium*, Jul. 2022. **O** URL: https://booodaness.github.io/tempus-spatium/symplectic-forms-poisson-brackets/.
- S. Bhattacharjee, "The real reason nothing travels faster than light," *Tempus Spatium*, Apr. 2022. URL: https://booodaness.github.io/tempus-spatium/real-reason-nothing-travels-faster-than-light/.

- S. Bhattacharjee, "Thomson's lamp and multivaluedness," *Tempus Spatium*, Feb. 2022. OURL: https://booodaness.github.io/tempus-spatium/thomson-lamp-multivaluedness/.
- S. Bhattacharjee, "A tale of two quantities," *Tempus Spatium*, Oct. 2021. OURL: https://booodaness.github.io/tempus-spatium/tale-two-quantities/.
- S. Bhattacharjee, "Factorials as invariant points," *Tempus Spatium*, Nov. 2021. **O** URL: https://booodaness.github.io/tempus-spatium/factorials-invariant-points/.
- S. Bhattacharjee, "Harmonic oscillators in scalar field theory," *Tempus Spatium*, Nov. 2021. OURL: https://booodaness.github.io/tempus-spatium/harmonic-oscillators-scalar-field-theory/.
- S. Bhattacharjee, "Scalar field lagrangian from symmetry considerations," *Tempus Spatium*, Dec. 2021.

 OURL: https://booodaness.github.io/tempus-spatium/scalar-field-lagrangian-symmetry-considerations/.
- S. Bhattacharjee, "The impossible cut," *Tempus Spatium*, Oct. 2021. **O** URL: https://booodaness.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 **Ist in Debate**, Bethany High School (Bangalore, India).

2015-2019 **Excellence in Academics**, Bethany High School (Bangalore, India).

2019, 2018, 2016 **Ist 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.