**Curriculum Vitae**

# Personal Information

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| Name: | Somajit Dey |
| Age: | 29 |
| Gender: | Male |
| Nationality: | Indian |
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| Homepage: | <https://somajitdey.github.io> |
| Others: | [ResearchGate](https://www.researchgate.net/profile/Somajit-Dey) ; [ORCID](https://orcid.org/0000-0002-6102-9777) ; [GitHub](https://github.com/SomajitDey) |

# Profile

Awaiting PhD degree in Theoretical Physics after submitting his thesis for evaluation to University of Calcutta, India.

Actively develops, maintains and contributes to open-source software.

# Objective

Seeking a postdoctoral position in computational, statistical physics, or any interdisciplinary field such as physical, quantitative biology where early career physicists might be able to contribute.

# Attitude

Quick to learn and adapt. Independent, self-taught and self-motivated. Values efficiency, originality and minimalism. Willing to work in multicultural, international teams or communities.

# Experience

* 5 years of successful (in terms of publication in esteemed peer-reviewed journals) research in highly efficient modelling and simulation of lyotropic liquid crystals with applications in academia, medicine, industry and education.
* Successful, independent (single-authored) research in topics such as special relativity and computational (molecular dynamics) methodology.
* Oral presentation in international, national and state-level seminars and symposia.
* Conceived of, developed and actively maintaining many well-accepted free and open-source projects spanning a wide range.
* Contributed to popular open-source projects maintained by others.
* Taught Physics to final year high school students for 3 years.

# Skills

* Coarse-grained modelling
* Molecular dynamics simulation
* Modern Fortran (object-oriented, parallel and modular)
* OpenMP
* OpenMPI (working knowledge)
* Bash scripting
* Git (command-line) and GitHub
* C
* C++ (working knowledge)
* Python (working knowledge)
* Go (Learning)
* MS Word
* MS PowerPoint
* Inkscape
* GNU Plot
* Ovito
* SSH
* Markdown
* GNU Privacy Guard – GPG
* OpenSSL
* Redis
* IPFS – Inter-Planetary File System
* AWS-EC2
* Caddy server
* Networking - Socat, Curl etc.

# Education & Qualifications

* 2016-present: Ph.D. student in Theoretical Physics, University of Calcutta, India
* 2017: Bangalore School on Statistical Physics -VIII, International Centre for Theoretical Sciences, Bengaluru, India
* 2016: PhD coursework, University of Calcutta, India
* 2013-2015: M.Sc. in Physics, University of Calcutta, India. [Advanced Elective: **Non-Linear Dynamics**]
* 2010-2013: B.Sc. in Physics (Hons.), Mathematics and Statistics, Ramakrishna Mission Residential College (Autonomous), Narendrapur, WB, India
* 2010: Higher Secondary, Ballygunge Govt. High School, Kolkata, India
* 2008: Secondary, Ballygunge Govt. High School, Kolkata, India

# Awards & Achievements

* Multiple research papers published in international, renowned peer-reviewed journals.
* Project [IPNS-Link](https://github.com/ipns-link/specs) won a 5000$ [Next Step Microgrant](https://github.com/ipfs/devgrants/blob/master/MICROGRANTS.md) from Protocol Labs.
* Project [ipfs-chat](https://github.com/SomajitDey/ipfs-chat) accepted in the official [list](https://awesome.ipfs.io/) of awesome IPFS apps.
* Project [redis-client](https://github.com/SomajitDey/redis-client) accepted in the official [list](https://redis.io/clients#bash) maintained by Redis Ltd.
* CSIR (NET) Senior Research Fellow, 2017-2020
* CSIR (NET) Junior Research Fellow, 2015-2017
* Selected for INSPIRE Fellowship during Ph.D. (2015)
* 27th Rank obtained in JRF (NET)-CSIR, December, 2014 (includes eligibility for lectureship).
* 86th Rank (98.14 Percentile) obtained in JEST for PhD in Physics, 2015
* 39th Rank (98.77 Percentile) obtained in JEST for Integrated PhD in Physics, 2013
* INSPIRE Scholarship from 2010-2015
* 226th Rank (97.61 Percentile) obtained in NEST, 2010

**Note**: All exams stated above are prestigious national level exams screening for higher studies (NEST, JEST) / fellowships (CSIR-NET) / eligibility for lectureship (CSIR-NET).

# Research publications

* S. Dey and J. Saha, ‘**Solvent-Free, Molecular-Level Modeling of Self-Assembling Amphiphiles in Water**’. Phys. Rev. E 2017, 95 (2), 023315. URL: <https://doi.org/10.1103/PhysRevE.95.023315>
* S. Dey, '**Time isotropy, Lorentz transformation and inertial frames**'. Studies in Hist. Phil. Mod. Physics 2018, 63, 123-127. URL: <https://doi.org/10.1016/j.shpsb.2018.01.003>
* S. Dey, ‘**Time-Reversible, Symplectic, Angular Velocity Based Integrator for Rigid Linear Molecules**’. 2018, arXiv:1811.06450. URL: <https://arxiv.org/abs/1811.06450>
* S. Dey and J. Saha, ‘**Minimal Coarse-Grained Modeling toward Implicit Solvent Simulation of Generic Bolaamphiphiles**’. J. Phys. Chem. B 2020, 124 (14), 2938–2949. URL: <https://doi.org/10.1021/acs.jpcb.0c00734>
* S. Dey, ‘**Minimal Modification to Nose-Hoover Barostat Enables Correct NPT Sampling**’. 2020, arXiv:2007.01838. URL: <https://arxiv.org/abs/2007.01838>
* S. Dey and J. Saha, ‘**SiMPLISTIC: A Novel Pairwise Potential for Implicit Solvent Lipid Simulations with Single-site Models**’. JCIS Open 2021, 1, 100004. URL: <https://doi.org/10.1016/j.jciso.2021.100004>

# Free & Open-Source Software (FOSS) Projects

Complete list available at [GitHub profile](https://github.com/SomajitDey). A few sample projects:

* [IPNS-Link](https://github.com/ipns-link/specs) : Hassle and cost-free, yet secure, self-hosting for everybody. Additional benefits – anonymity and censorship-resistance, efficient live streaming etc. This project [won](https://github.com/ipfs/devgrants/issues/122#issuecomment-987230372) a 5000$ [Next Step Microgrant](https://github.com/ipfs/devgrants/blob/master/MICROGRANTS.md) from Protocol Labs.
* [ipfs-chat](https://github.com/SomajitDey/ipfs-chat) : Terminal-based, secure chatrooms using IPFS. Works over both LAN and internet (includes NAT traversal). Supports private-messaging and file/directory sharing. Server/broker-less, peer-to-peer, decentralized. This project is also included in the lists of [Awesome IPFS](https://awesome.ipfs.io/) and [Awesome Decentralized](https://github.com/croqaz/awesome-decentralized).
* [tunnel](https://github.com/SomajitDey/tunnel) : Peer-to-peer, secure, TCP/UDP port forwarding using HTTP(s) relay for NAT/firewall traversal.
* [redis-client](https://github.com/SomajitDey/redis-client) : Bash scripting library + CLI + Connection-pool for [Redis](https://redis.io). This is included in the [official list of clients](https://redis.io/clients#bash) maintained by Redis Ltd.
* [tocgen](https://github.com/SomajitDey/tocgen) : A nice little bash-script for generating likeable Table of Contents in markdown documents.
* [GiBBERISh](https://github.com/SomajitDey/gibberish) : Git and Bash Based Encrypted Remote Interactive Shell (GiBBERISh). For when you cannot use SSH.
* [ProgRep](https://github.com/SomajitDey/progrep) : Progress bar, ETA etc. for simulations.
* [SerTAin](https://github.com/SomajitDey/sertain) : Simple Bash library for building a basic HTTP server.
* <https://predictalink.herokuapp.com> : Map URLs to custom names. Built using Bash.
* [2FA-toolkit](https://github.com/SomajitDey/2FA-HOTP-TOTP-Bash) : Shell-script (Bash) with functions relevant to two-factor-authentication. Compatible with Google Authenticator.
* [f\_](https://github.com/SomajitDey/f_) : A KISS library for extending standard Fortran in a portable way. Very much a work in progress.
* [M\_system](https://github.com/urbanjost/M_system) : Fortran Library (contributed, not maintainer).
* [Pantry](https://github.com/imRohan/Pantry) : Online key-value store (contributed, not maintainer).

# References

* *Professor Jayashree Saha*, Department of Physics, University of Calcutta, [jsphy@caluniv.ac.in](mailto:jsphy@caluniv.ac.in)
* *Professor Alokmay Datta*, Emeritus Prof. (Raja Ramanna Fellow), Central Glass and Ceramics Research Institute, [alokmaydatta@gmail.com](mailto:alokmaydatta@gmail.com)
* *Professor Debnarayan Jana,* Department of Physics, University of Calcutta, [djphy@caluniv.ac.in](mailto:djphy@caluniv.ac.in)