Curriculum Vitae

Personal Information

Name:	Somajit Dey
Age:	29
Gender:	Male
Nationality:	Indian
Email:	1) dey.somajit@gmail.com 2) sdphys_rs@caluniv.ac.in
Homepage:	https://somajitdey.github.io
Other:	ResearchGate ; ORCID ; GitHub

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 complex systems with applications in academia, medicine, industry and education.
- Successful, independent (single-authored) research in topics such as special relativity and computational 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
- C
- C++ (working knowledge)
- Python (working knowledge)
- MS Word
- MS PowerPoint
- Inkscape
- GNU Plot

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 ipfs-chat accepted in the official list of awesome IPFS apps.
- Project redis-client accepted in the official list 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. A few sample projects:

- 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 and Awesome Decentralized.
- tunnel : Peer-to-peer, secure, TCP/UDP port forwarding using HTTP(s) relay for NAT/firewall traversal.
- redis-client : Bash scripting library + CLI + Connection-pool for Redis. This is included in the official list of clients maintained by Redis Ltd.
- IPNS-Link : Hassle and cost-free self-hosting for everybody. Additional benefits – anonymity and censorship-resistance, efficient live streaming etc.
- tocgen : A nice little bash-script for generating likeable Table of Contents in markdown documents.
- GiBBERISh : Git and Bash Based Encrypted Remote Interactive Shell (GiBBERISh). For when you cannot use SSH.
- ProgRep : Progress bar, ETA etc. for simulations.
- SerTAin : Simple Bash library for building a basic HTTP server.
- https://predictalink.herokuapp.com : Map URLs to custom names. Built using Bash.
- 2FA-toolkit : Shell-script (Bash) with functions relevant to two-factor-authentication. Compatible with Google Authenticator.
- f_ : A KISS library for extending standard Fortran in a portable way. Very much a work in progress.
- M_system : Fortran Library (contributed, not maintainer).
- Pantry : Online key-value store (contributed, not maintainer).

References

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