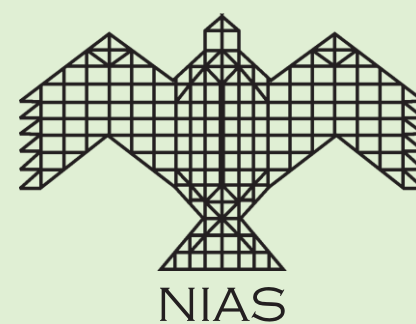


## NIAS-SERB Online Workshop on

# ALGORITHMS IN THE INDIC TRADITION

With References to Modern Computer Science

June 4-6 & 10-13, 2021



An online workshop on the above theme shall be conducted by NIAS under the Mathematics Heritage Programme, with support from SERB. The workshop is the first-of-its-kind and will focus on making ancient Indic algorithms and methods available to modern computer science, data science and mathematics students.

The objective is to gain hands-on experience, skills and tools related to age-old methods of computation, which have found new uses and applications in the world of computer science.

### Topics and Methodology

The topics to be covered include cryptography, combinatorics, linguistics and kolam geometry. The pedagogy for the workshop will be a mixture of lectures and 'learning by doing'. The methodology of the workshop will be lectures followed by tutorials and assignments. Student presentations will be encouraged. The focus is both on theoretical understanding and on imparting practical skills. Actual problems shall be solved using the algorithms and comparison with other extant modern algorithms shall be undertaken by students.

The workshop will be conducted by a combination of eminent academics and young scholars and enthusiasts. The participation of younger instructors is a deliberate strategy to widen the dissemination of these methods and engage the attention of students more effectively. Senior academic faculty shall be present to answer broader questions and provide guidance to participants.

### Duration and timings

The online workshop will have synchronous and asynchronous components. The synchronous components comprising of lectures and tutorials will be of 2 hours duration and will be conducted online on Friday (2 PM IST) and Saturday and Sunday (10 AM IST). The asynchronous component will consist of homework assignments and can be

completed by students at their own convenience.

The workshop will run over two "weekend" blocks of Fri-Sat-Sun during June 4-6 and June 11-13. The dates and timings are chosen to minimize the impact on other ongoing work.

### Eligibility

The programme seeks to attract young and aspiring scholars towards a deeper engagement with algorithms in the Indic tradition.

Students at all levels of college / university education anywhere in India or abroad may apply. Students with a background and interest in Mathematics, Computer Science, Data Science and Computational Methods are encouraged to apply, although others will also be considered. Skill in computer programming will be an advantage.

### How to apply

Interested candidates may write to the organizers at [math.heritage@nias.res.in](mailto:math.heritage@nias.res.in) with the following information:

1. Full Name:
2. Date of birth:
3. Email:
4. Telephone:
5. Mailing Address:
6. Academic institution and course studying:
7. Areas of interest (not more than 3 topics):
8. Reasons for applying to this workshop (in under 100 words):

9. Student must confirm:

- a. ability to attend all the online sessions as per the schedule
- b. willingness to complete the assigned work to the best of her/his ability.

There is **no fee** for participation, as the workshop is sponsored by SERB/ DST, Government of India under SERB Karyashala. Applications must be received by **31 May 2021**.

Selection will be on the basis of background and aptitude as determined by the organizers, from the information provided in the application. Selected participants shall be informed by email and the detailed programme schedule shall be shared with them.

### Workshop Attendance cum Proficiency Certificate

Certificate shall be issued to participants based on attendance and completion of required number of assignments. Merit certificate may be issued to outstanding students who demonstrate skill and depth in their work and such students may be invited to pursue internships in this area at NIAS.

In case of any questions,  
please write to:  
[math.heritage@nias.res.in](mailto:math.heritage@nias.res.in)

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Indian Institute of Science Campus,  
Bengaluru 560 012  
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URL: [www.nias.res.in](http://www.nias.res.in)