

# Vishal Sai Vetrivel

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## Curriculum Vitae

DAE Disha, NIUS Scholar

### Education

- 2008–2019 **AISSE**, *The PSBB Millennium School – CBSE*, Chennai, 88.6%  
2019–2021 **SSCE**, *The PSBB Millennium School – CBSE*, Chennai, 94.4%  
2021–2026 **Int. Msc (Physics)**, *UM DAE CEBS*, Mumbai, Overall CGPA - 8.41
- Semester 1 – 9.04 SGPA
  - Semester 2 – 8.43 SGPA
  - Semester 3 – 8.96 SGPA
  - Semester 4 – 8.62 SGPA
  - Semester 5 – 8.10 SGPA
  - Semester 6 – 7.96 SGPA
  - Semester 7 – 8.08 SGPA
  - Semester 8 – 8.36 SGPA

### Achievements/Milestones

- 2023 **NIUS Physics Camp 19.2**, *Summer Project*, TIFR (Mumbai)  
Digital pulse shaping of HPGe detector for neutron damage study.  
2022 **NIUS Physics Camp 19.1**  
2020 **RSIC – IIT Madras**, (*Canceled due to COVID-19 pandemic*)  
2018 **Times Spark Scholar**  
2017 **International Rank 1 in SOF NCO**  
2016 **Summer Camp on Astrophysics and Astronomy**

### Projects

- July 2025 **MESA Stellar modeling for determining the age of stars using Asteroseismology**,  
*Msc. Thesis* TIFR, Mumbai  
Prof. Shravan Hanasoge, **DAA**, TIFR, Mumbai  
Studied methods of improving the accuracy of stellar models generated through MESA, specifically working with Red Giants, such as surface corrections suggested by Ball & Gizon and Kjeldsen. Also implemented the Canuto-Mazzitelli and Canuto-Goldman-Mazzitelli Models into MESA.
- August 2024 **Helioseismic Inversion of Rotation Rate using RLS method**, *UM DAE CEBS*, Mumbai  
*Semester Project* Prof. H M Antia, UM DAE CEBS, Mumbai  
Studied the fundamentals of Helioseismology and wrote programs, using Fortran and data from HMI and GONG, to solve the inverse problem of rotation rate by using the RLS method.  
[Report 1](#)  
[Report 2](#)

Summer 2023 **Digital pulse shaping of HPGe detector for neutron damage study**  
Summer Prof. R Palit, NUCLEAR AND COMPUTATIONAL PHYSICS, **DNAP, TIFR**, Mumbai  
Project Developed an algorithm using CERN's ROOT to digitally correct the spectrum obtained from a neutron damaged HPGe detector which showed that there is likely a statistical correlation between rise times of pulses and neutron damage in spectrums under Prof. R Palit.  
Report

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## Languages

English Tamil Native  
Hindi Intermediate  
Japanese Beginner (Currently Learning)

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## Computer skills

- 2016 – **Introduction to Modern Application Development (NPTEL)**, IIT Madras, Elite – 80%
- Proficient in Fortran, Visual BASIC, Rust, C#, Python, Julia, ROOT, NodeJS and tooling in Windows and Linux.
- Basic web development with Javascript, HTML, CSS.
- Various numerical methods for scientific computation.
- Experience using MESA for stellar modelling.
- Design knowledge using Canva and Adobe InDesign.
- Attended workshop on Android development during 4CCon - 2<sup>nd</sup> National Conference of Free Software Movement of India
- Most code published on Github. ([Discord Bots](#) <sup>[1]</sup> <sup>[2]</sup>, [Text Editors](#), [Scientific Demos](#), etc.)
- Participated in Mindbox (2016–2018), HackerRank CodeRite (2019–2020), Advent of Code (2020–2023)

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## Interests

- Music (Drums): Certified at level 1 upto Grade 3 Trinity, Played in college band
- Debating and MUNs: Represented school and college at ISDS, Tandem, Brihaspati, Millennium MUN, IICM, etc.
- Elected responsibilities:
  - At School:
    - Director of the Debate Club - 2019–2020
    - Secretary of the Debate Club - 2020–2021
  - At College:
    - Student Committee Representative for the Science Club and the Literature Club
- Other Club Activities:
  - Member of The Science Club (<https://cbsscienceclub.github.io>)
  - Coordinator of the CEBS Lifestyle Instagram Handle ([https://instagram.com/cebs\\_lifestyle](https://instagram.com/cebs_lifestyle))
  - Designer of the CEBS Novellus Annual Magazine
  - Founding Member of the Anime Club at CEBS