

Jishnu Parayil Shibu

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PERSONAL PROFILE

I am a second-year Master's student in Mathematics at the Indian Statistical Institute, specializing in geometric analysis. My current Master's project is in geometric measure theory, and I have previously worked with Prof. Benjamin Andrews at the Australian National University on topics related to geometric flows and the calculus of variations. During my undergraduate studies, I pursued research internships in machine learning and robotics, which, while no longer my focus, helped me develop valuable research and problem-solving skills that are universally applicable.

EDUCATION

Indian Statistical Institute

MSc. in Mathematics, CGPA (till present): 94.0/100

Kolkata, India

Jul. 2024 - May. 2026

Relevant Coursework:

- Fourier Analysis, Functional Analysis, Differential Geometry I, Riemann Surfaces, Teichmuller Theory, Symplectic Geometry, Probability Theory, Measure Theory, Analysis on Manifolds, Topology I and II, Algebra I and II

Sri Aurobindo International Centre of Education

BSc. in Mathematics, Best Student Award

Puducherry, India

Dec. 2020 - Oct. 2023

- Mathematics, Mathematical Statistics, Physics, Computer Science, English, French

RESEARCH EXPERIENCE

Master's Project (Sem. 3) in Geometric Measure Theory

Jul. 2025 - Present

Under Prof. Partha Sarathi Chakraborty, Indian Statistical Institute

- Studied topics in geometric measure theory from *Measure Theory and Fine Property of Functions* (Evans and Gariepy, 1992)
- Prepared a mid-semester report on "An Exposition of the Area Formula" (available here)
- Preparing an end-semester report on "Co-Area Formula for BV Functions"
- Will extend this work next semester (sem. 4) by studying Simon's *Geometric Measure Theory*

Reading Project with Prof. Benjamin Andrews

May. 2025 - Jul. 2025

Future Research Talent Program, Australian National University

- Studied topics in geometric flows from *Extrinsic Geometric Flows* (Andrews et al. 2020)
- Explored topics in the calculus of variations using *Variational Methods* (Michael Struwe 1990)

Research Intern

Apr. 2023 - Apr. 2024

Prof Min Xu's lab, Carnegie Mellon University

remote

- Co-authored a research paper which introduces a novel video anomaly detection framework under a lab automation setting

Machine Learning and Robotics Researcher

Feb. 2022 - Mar. 2024

FG Intelligent Autonomous Systems Group, Technische Universität Darmstadt

remote

- Contributed to the development of multiple projects which include computer vision, robotics and software development

PUBLICATIONS

Deep Video Anomaly Detection in Automated Laboratory Setting

Jishnu Parayil Shibu, Vibhu Dalal, Min Xu, Ali Dabouei et. al. 2024

[Link](#) (Accepted in journal 'Expert Systems with Applications Elsevier')

ADDITIONAL COURSES

Student under Prof. Vikraman Balaji

Feb. 2023 - Nov. 2023

Chennai Mathematical Institute

- Explored various topics spanning from Abstract Algebra, Linear Algebra, and Analysis
- Identified and worked on potential gaps in knowledge, building a solid foundation for graduate level mathematics

AWARDS & HONORS

- Recipient of the **Future Research Talent (FRT) Award**, Australian National University. Awarded AUD 8,500 to support a 12-week research internship in geometric analysis under Prof. Ben Andrews: 2025
- Winner of the **Best Student Prize** when completing third and final year undergraduate degree: 2023
- 11 Time Winner of the **Prize for Academic Excellence**: 2013-2023
- Recipient of a **Double Promotion**, successfully completing Class 11 and Class 12 within a single academic year: 2019-2020

WORK EXPERIENCE

Machine Learning Engineer

May. 2024 - Jul. 2024

Neptune Technologies LLC, Naples, Florida

remote

- Contributed to the development of machine-learning models for stock-market prediction and to the overall software pipeline.

STANDARDISED TEST SCORES

International English Language Testing System (IELTS): 8.5/9

Oct. 2025

Listening (9), Reading (9), Writing (8), Speaking (8)

Diplôme D'Études en Langue Française DELF B2: 91.5/100

Dec. 2023

Listening (23), Reading (20.5), Writing (23), Speaking (25)

Graduate Record Examinations (GRE): 332/340

Oct. 2023

Quant (168), Verbal (164), AWA (4.5)

EXTRA-CURRICULAR ACTIVITIES

Piano

Dec. 2015 – Present

Western classical

Tabla

Dec. 2018 – Present

Learned compositions from various Gharanas

Physical Education

Dec. 2009 – Oct 2023

Gymnastics, Athletics, Aquatic Sports, Games (Football, Basketball, Volleyball, Hockey)

ACADEMIC REFERENCES

Prof. Ben Andrews, Professor at Australian National University, Canberra, Australia, +61 2 6125 3458, Ben.Andrews@anu.edu.au

Prof. Partha Sarathi Chakraborty, Professor at Indian Statistical Institute, Kolkata, India, parthacsarathi.isi.smu@gmail.com

Prof. Samik Basu, Associate Professor at Indian Statistical Institute, Kolkata, India, samikbasu@isical.ac.in

Shanti Ramanathan, Teacher of Mathematics at Sri Aurobindo International Centre of Education, Puducherry, India, +91 9944611954, shanti.ramanathan@gmail.com

Prof. Vikraman Balaji, Distinguished Professor at Chennai Mathematical Institute, Chennai, India, +91 9884392556, vikramanbalaji@gmail.com

Prof. Jan Peters, Full Professor (W3) at Technische Universität Darmstadt, Germany, +49 61511625374, peters@ias.tu-darmstadt.de