

Prajit Adhikari

prajit.raj.adhikari@gmail.com | +977-9861294040 | [LinkedIn](#) | <https://github.com/adhikariprajitraj>

EDUCATION

IIT Madras, Chennai

July 2026

Industrial Mathematics and Scientific Computing

- **Relevant Coursework:** Numerical Linear Algebra, Statistical Inference and Learning, Data Structures and Algorithms, Applied Mathematics and Modeling, Graph Theory, Stochastic Differential Equations.

Thapathali campus, Institute of Engineering, Tribhuvan University.

April 2024

Bachelor of Engineering in Industrial Engineering.

Thapathali

- **Relevant Coursework:** Statistics, Operation Research, Mathematics(Calculus, Linear Algebra, Analysis), Economics, Numerical Methods with MATLAB, Project Management, Supply Chain Management, Finite Element Analysis, Theory of Machine, C Programming and FORTRAN.

RESEARCH EXPERIENCE

Operations Research Intern at Lalitpur Metropolitan Office

Jan 2024 - April 2024

- Optimized waste transshipment routes using Python, GIS, and open-source tools, enhancing cost-effectiveness and sustainability in waste management.
- Designed waste segregation plants and workshops with ERP integration, improving waste processing efficiency and informing policy decisions through statistical analysis.
- Optimized waste management using clustering algorithms and route optimization with time windows.
- Contributed research on integrating theoretical models such as Facility Location problem, route optimisation.

Quantitative Researcher at a Private Family Office, Singapore (Remote)

Feb 2024 - April 2024

- Conducted research on mean reversion and momentum-based trading strategies, increasing system efficiency and improving strategy ROI.
- Developed and backtested data-driven investment strategies, optimizing portfolio performance and reducing risk exposure.

Research Interests: Combinatorial optimization, integer programming, graph algorithms.

Core Methods: MILPs, network flows, heuristics, dynamic programming, probabilistic modeling.

WORK AND OTHER EXPERIENCE

FrontierMaths AI Mathematics and Physics Expert (Remote)

Mercor | Dec 2025- Present

- Contributed to the IMO-FrontierMath initiative with Mercor, collaborating to design, evaluate, and provide expert insights on advanced mathematical problems used to benchmark and improve AI reasoning performance.
- Writing and solving hard IMO problems from the topics Number Theory, Combinatorics and Algebra.
- Wrote grad level Probability Theory, Analysis and Set Theory problems that stump AI models like GPT, Gemini and Claude.

Board Member and Community Manager

Optimization4All | Sep 2024-Present

- Conducted and moderated workshops and community connect sessions on VRP, Open Source Solvers and ML+ Optimization problems.
- Collaborated with experts from around the world to publish newsletters, guides, learning materials and project papers.
- Outreach and designs for the sessions such as webinars, workshops and community connects around combinatorial optimization, convex optimization and talking about solvers.

Lesson and Problems Content Designer/ Reviewer (Contract)

MathAcademy | Jan 2025-June 2026

- Wrote problems and lessons for Discrete Mathematics Course which launched in March 2025 and was quickly promoted to *Reviewer*.
- As a reviewer, I review tasks related to mathematics for machine learning and have been currently writing and designing lessons for SAT and Differential Equation course incorporating pedagogical techniques like scaffolding, spaced-repetitions and adjusted cognitive load.

NLP Integration & SQL/BI Developer, California

Gavie AI & CloudProAI (Part-time, Remote) | May-Nov 2024

- Built and deployed NLP models on Azure to optimize CRM processes for small-scale businesses, reducing data processing time and improving client engagement through faster response times.

- Streamlined database management with SQL, cutting query execution time, and developed custom BI reports for HR and performance management and led migration of database from Access to modern web-based architecture.

TEACHING EXPERIENCE

Mathematical Association of Nepal, Executive Member

June 2019- Present

- Taught algebra, combinatorics and number theory in Nepal and prepared handouts on lectures both in person and virtually and graded the papers.
- Developed national math contest problems and provided training in number theory, geometry, algebra, and combinatorics, enhancing participant performance in national competitions.

International Mathematics Summer Camp Trainer

June 2026- July 2026

- Taught algebra and combinatorics to contestants from 15+ countries.

Research Training for Mathematical Modeling

2023-Present

- Lectured on differential equations, linear programming and statistical analysis as a tool for mathematical modeling and discussed open world problems interactively with high school students.
- Moderated lecture series from Chinese high school researchers on mathematical modeling.

EXTRACURRICULAR ACHIEVEMENTS AND ACTIVITIES

Observer at International Mathematics Olympiad

2024 & 2025

- Engaged with international teams and experts, enhancing understanding of global mathematical standards.
- Networked with global mathematics leaders, enhancing professional connections and deepening expertise.

Full ride scholarship under Nepal Government for engineering degree

2019

Participation in International Mathematics Olympiad

2018 & 2019

- Competed in the IMO, [representing Nepal in 2018 \(Romania\) and 2019 \(UK\)](#).

Advisor at [International Mathematics Modeling Competition](#)

2023 & 2024

- Organized the National Mathematics Modeling Competition and guided teams in developing mathematical models for real-world problems. Achieved [two Honorable Mention in 2023](#) and [one Honorable Mention in 2024](#), and Meritorious in 2025.

PUBLICATION

- Chenyue Fan, Ayesha Abdul Qadir Memon, Prajit Adhikari, Muhammad Osama, and Calvin R. Wei. "[REVISITING THE SARS-COV-2 MAIN PROTEASE: A 2023 IN SILICO ODYSSEY IN SEARCH OF POTENTIAL INHIBITORS](#)". Journal of Population Therapeutics and Clinical Pharmacology, vol. 30, no. 18, Oct. 2023, pp. 1032-49, doi:[10.53555/jptcp.v30i18.3232](#). **Contribution:** Data pipeline and visualization
- Exploration of Mathematics Olympiad for Nepal (Book)

Work in Progress

PROJECTS

EMSR-b and DAVN Heuristics in Airline Revenue Management

[Paper Link](#)

[App Link](#)

Collaborative research project under Dr. Abhijit Gosavi and Dr. Andreas Emil Feldmann

- Applied and compared revenue management heuristics (EMSR-b and DAVN) for airline booking optimization.

3D Drone Navigation Simulation

June 2022- July 2022

- Developed a 3D drone navigation system with static obstacles, integrating A* and RRT algorithms for initial pathfinding and enhanced navigation using reinforcement learning (Proximal Policy Optimization) for dynamic path optimization.
- Evaluated performance based on path length, time, and obstacle avoidance.

TECHNICAL SKILLS

Languages: Python, MATLAB, R, SQL, Julia, C.

Tools & Frameworks: Google OR tools, AMPL, Unix, Flask, MySQL, Pytorch, NumPy, Pandas, Oracle Crystal Ball, Microsoft Suite, MySQL, RStudio, Gurobi, Nextmv.

Developer Tools: Excel, VS Code, Git, Tableau, PowerBI, Azure Data Studio, Postman, Notion.

REFERENCES

Er. Sudan Neupane - Assistant Professor, IOE

neupanesudan@ioe.edu.np

Binod Prasad Pant - Assistant Professor and HoD at KUSOE; President, MAN

binod.pant@ku.edu.np

Dr. Alex F. Smith; Executive Curriculum Designer

alex@mathacademy.com