Sagun Bhandari

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EDUCATION

Pitzer College August 2024 – May 2028
Bachelor of Arts in Biochemistry & Mathematics, Minor in Economics Claremont, CA
Relevant Coursework: Real Analysis, Machine Learning, Differential Equations, Discrete Mathematics, Linear Algebra, Numerical Methods, Statistics, Biochemistry, Cell Biology, Organic Chemistry

EXPERIENCE

Math-Physics Research Assistant August 2026 – Present
Dept. of Natural Sciences, Pitzer College Claremont, CA

- Investigate context-dependent learning and prediction in Hybrid Adaptive Networks integrating biological and artificial neural systems through computational modeling, machine learning, and analysis of energy-efficient adaptive behaviors under a DARPA-funded MURI program
- Develop Python simulation pipelines using NumPy and SciPy to model hybrid neural networks (hNMs), implement Bayesian belief updates, and evaluate predictive performance against theoretical bounds across network topologies and spectral regimes

Molecular Biology Research Assistant May 2025 – July 2026
Dept. of Molecular Biology, Pomona College, Pitzer College Claremont, CA

- Quantified ACR signaling in *C. elegans* neurons across 5+ transgenic lines by leveraging 3D imaging, microscopy, and statistical data analysis to evaluate behavioral assays
- Designed and validated experimental constructs, applying quantitative analysis to PCR and electrophoresis data to ensure high-fidelity genetic transformations
- Co-authored Nicotinic acetylcholine receptors function with adhesion molecule SAX-7 to reverse cell orientation during migration (2025) PMID: 41205974

PROJECTS AND FELLOWSHIPS

Nesin Mathematics Village Fellowship Aug 2026, Turkey
Fellow & Course Assistant, Nesin Mathematics Village (Şirince, Turkey)

- Selected for an intensive mathematics fellowship; served as **Teaching Assistant** for an advanced *Introduction to Morse Theory* course, leading problem-solving sessions and supporting student proof comprehension
- Completed rigorous upper-undergraduate and graduate-level coursework in ***Computational Algebraic Geometry, Game Theory, and Probability & Statistics***

CENEU Medical Spanish Program Aug 2025, Mexico

- Researched and analysed community health infrastructure and medical services while developing proficiency in medical Spanish for cross-cultural healthcare settings
- Shadowed physicians to observe clinical workflows, public health epidemiology screenings, and patient care delivery within the Mexican healthcare system

Public Health & Epidemiology Research Aug 2023 – 2024, Nepal
Peer Mentor & Student Researcher, Incubate Nepal

- **END TB(DOTS Nepal):** Spearheaded epidemiological data collection and statistical modeling alongside Harvard scholars to evaluate tuberculosis treatment initiatives in remote Nepal
- **SUPARI(Areca Nut Toxicology):** Mentored students in data structure organization and literature reviews to analyze carcinogenic compounds in areca nuts and their physiological impacts
- Tutored secondary school students in core STEM disciplines (physics, chemistry, biology, math) to support quantitative research writing and improve academic outcomes

LEADERSHIP & ACTIVITIES

Campus Leadership 2024 – Present
Pitzer College Claremont, CA

- Diversity Committee Student Representative, Pitzer Student Senate.(Aug 2025, May 2026)
- Social Committee Co-Head, Pasifika Asian Student Union (PASU); Trip Facilitator, People of Color Outside;
- Treasurer, Womxn of Color Collective
- Junior Year Representative, Pitzer International Students Association
- Educational Outreach for Public Debate Program- instructed debate and public speaking for 150+ first-generation, low-income students to expand civic education in the summer.
- Conference Assistant and Residence Life Office Assistant
- Course Assistant for Linear Algebra, General Math Tutor.

Honors

Flora Sanborn Pitzer Scholarship(2026), Bronze Medalist, Nepal Chemistry Olympiad (2023); Semifinalist, National Mathematics Olympiad (2022, 2023); Principal's Merit Award (2018-2022)

SKILLS

Technical: Python (NumPy, pandas, LLM APIs), R (ggplot2), C++
Languages: Nepali, English, Urdu/Hindi, Korean, Elementary Mandarin, Spanish
Laboratory: PCR, Microscopy (Leica Thunder), 3D Imaging cloning, molecular biology techniques