

Aiswarya Prasad

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PhD in Quantitative Biology, specializing in microbiome ecology and evolution using a combination of bioinformatic and wet-lab approaches. Experienced in applying a strategic approach to solve problems honed through leadership experience running a biotech accelerator program and consulting on projects for life science startups.

Core competencies: microbiology, omics analysis, sequencing (Illumina PacBio, Nanopore), molecular biology (e.g., PCR/qPCR, cloning, DNA/RNA extraction, library prep), lab automation (Opentrons), multivariate analysis, data visualization (R, Python), pipeline development (Snakemake, Linux, HPC / Cloud computing), scientific writing, Airtable (database management and automation, dashboard and interface setup), cross-functional collaboration.

Research Experience

Senior Researcher (formerly PhD Candidate) / Aug 2020 – Sep 2025

University of Lausanne, Switzerland

- Designed and executed a large-scale comparative metagenomics study of honeybee gut microbiota evolution; developed Snakemake workflows for genome assembly, SNP profiling, phylogenetics, and functional profiling
- Discovered strain-level patterns in gut microbial colonization successfully; developed end-to-end a PacBio long-read sequencing pipeline later adopted in multiple lab projects.
- Initiated a strategic international collaboration, expanding project scope and accelerating timeline by one year.
- Advocated for and integrated reproducible documentation practices in graduate-level bioinformatics course using R Markdown as recurring teaching assistant.
- Presented research findings at four international conferences and in peer-reviewed publications.

Master's Thesis Researcher / May 2019 – May 2020

Indian Institute of Science, Bangalore

- Developed end-to-end pipeline from sample collection to analysis for fecal metagenomics (and metaproteomics LC-MS/MS).
- Established a Nanopore sequencing pipeline (10% of setup cost) for microbiome analysis in low-resource settings from sample preparation to sequencing data analysis.
- Applied pipeline to study gut microbiome shifts in chronic pancreatitis patients in collaboration with clinicians.

iGEM Undergraduate Researcher / Mar 2016 – Oct 2016

Indian Institute of Science, Bangalore

- Co-founded the first iGEM team from the institute; secured a bronze medal in Boston.
- Supported successful fundraising efforts for research and travel through 3 grants for the team.
- Demonstrated proof-of-concept in the lab of a quorum-sensing-based auto-inducible bacterial protein expression system.

Leadership and Professional Engagement

Consulting Extern (Clinical Data & Insights) / Oct 2025 - Present

Double Blind Bio, San Francisco

- Built Python/SQL pipelines to extract structured insights from clinical site documents using LLMs and embeddings synthesized into geospatial analyses of patient access and concise summaries for thought leadership, business development and customer-facing materials.

Assistant Manager, Activator Operations / Jun 2025 - Present

Nuclease HQ

- Created custom workflows (Python and Airtable), interfaces and dashboards to streamline operations and developed operational playbooks and delivered training to leaders across 17 international chapters.

Director, Strategy and Experts Lead / Oct 2024 – Present

Nuclease Switzerland

- Assessed biotech startups for selection to Nuclease's 2024 Activator cohort; sourced 10+ technical, market, and regulatory experts to advise program participants.

Consulting Project Manager / May 2024 – Jul 2025

The Consulting Society, EPFL

- Led a three-member consulting team for a bacterial diagnostics startup; delivered market and pricing strategy adopted into subsequent investor pitches.

Scientific Standards Contributor / Dec 2024

Methods in Microbiomics

- Contributed [best practice guidelines](#) for comparative metagenomics and variant analysis to promote robust, reproducible workflows.

Policy & Advocacy / Nov 2018

iGEM Delegate, UN Biodiversity Conference (COP14)

- Represented the youth science community in policy discussions on genetic engineering, access and benefit-sharing, and synthetic biology. Published reflection [here](#).

Committee & Review Work

- Faculty Hiring Committee – Postdoc/PhD Rep, University of Lausanne (2023)
- Reviewer: Ecological Monographs, Insect Molecular Biology (since 2023)

Selected publications

Prasad, A. et al. (2025). Priority effects determine community composition at the strain level in the honeybee gut microbiota. (In Review)

Prasad, A. et al. (2025). Evolution of gut microbiota across honeybee species revealed by comparative metagenomics. Nature Communications

- *Featured in Editor's highlights of Top 50 papers in "Microbiology and Infectious diseases"*

Mazel, F., **Prasad, A.** et al. (2024). Host specificity of gut microbiota associated with social bees: patterns and processes. Microbiology and Molecular Biology Reviews

Baud, G.L., **Prasad, A.** et al. (2023). Turnover of strain-level diversity modulates functional traits in the honeybee gut microbiome between nurses and foragers. Genome Biology

Education and awards

PhD in Quantitative Biology / Aug 2020 – Aug 2025

University of Lausanne, Switzerland

- Mathilde Agassiz Scholarship (~ \$70k, 1st-ranked applicant), Faculty of Biology and Medicine Fellowship
- Best Selected Talk, Microbiome Virtual International Forum.33 (2024)

BS + MS in Biology / Aug 2015 – July 2020

Indian Institute of Science (IISc), Bangalore

- Awarded KVPY Fellowship (top 0.3%, All-India Rank 335)