

# INDHU MIRRA AYYAPPAN

## BIOINFORMATICS GRADUATE | GENOMICS & DATA ANALYSIS

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### SUMMARY

Bioinformatics graduate student with an M.Eng. in Biological Engineering and experience in GMP-regulated environments. Skilled in Python, R, and Linux command-line workflows for genomics and other scientific datasets. Strong foundation in data integrity, QC, and reproducible documentation from previous industry roles in testing and quality systems. Interested in roles involving genomics, data analysis, or reproducible pipeline development.

### CORE SKILLS

- Reproducible analysis workflows
- Data QC & documentation
- Scientific communication
- Troubleshooting & root-cause analysis

### TECHNICAL SKILLS

**Programming:** Python, R, Bash

**Tools:** Git/GitHub, Linux/Unix, RStudio, VS Code

**Bioinformatics:** PLINK2, GAPIT, TASSEL, GWAS  
QC, barcode & phylogenetic workflows

**Workflow:** R Markdown, Jupyter

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### PROFESSIONAL EXPERIENCE

**Quality Associate - WestRock (Smurfit WestRock | Mississauga / Toronto)** Nov 2022 - Aug 2025

- Maintained QMS & site documentation to ISO/Food Safety/Pharma standards.
- Consolidated QC data into weekly/biweekly summaries for audits and management.
- Coordinated supplier documentation/complaints and multi-site record control.

**Quality Assurance Technician - The Original Cakerie | London, ON** Aug 2021 - Oct 2022

- Performed daily GMP/BRC monitoring, environmental inspections, and finished-product checks; documented trends and deviations.
- Supported microbiological QC testing and generated audit-ready documentation.

**Intern Trainee - AstraZeneca | India** Dec 2018 - Mar 2019

- Conducted dissolution and content-uniformity testing for IMDUR® formulations.

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### PROJECTS (GENOMICS • DATA QC • SCIENTIFIC WORKFLOWS)

**Genome-Wide Association Study Pipeline (Arabidopsis)** Oct 2025

Reproducible PLINK2 workflow for QC, PCA, LD clumping, and association testing.

**Tools:** PLINK2, R, bash

**Key skills:** workflow design, population genetics, scientific documentation.

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**Barcode-Based Species Richness Analysis (Danioninae)** Oct 2025

Automated QC and diversity summaries from COI barcodes; generated specaccum curves.

**Tools:** R (tidyverse, vegan)

**Key skills:** reproducible analysis, data visualization, ecological statistics.

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### EDUCATION

**Master of Bioinformatics (MBINF)** - University of Guelph Sep 2025 - Present

**Master of Engineering (Biological Engineering)** - University of Guelph Jan 2020 - May 2021

**B.Tech (Biotechnology & Microbiology)** - Mepco Schlenk Engineering College Jul 2015 - May 2019

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### CERTIFICATIONS & ACTIVITIES

ISO 9001:2015 Internal Auditor (BSI, 2023) • HACCP I (NSF, 2021) • cGMP in Food Safety (NSF, 2021)  
ABLE INDIA BEST 2017 • Product Innovation Challenge Finalist 2018