

PRUTHVIRAJ CHAVAN

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SUMMARY

Final-year B.Tech student at Vasantrao Naik Government College of Agricultural Biotechnology, Yavatmal. Passionate about solving agricultural challenges by bridging 'Wet Lab' rigor with 'Dry Lab' data science. Proven track record in developing IoT-based precision agriculture systems and AI-enhanced bioinformatics tools. Looking to leverage skills in Python, R, and hardware engineering to drive innovation in Ag-Tech.

EDUCATION

B.Tech in Agricultural Biotechnology

Vasantrao Naik Government College of Agricultural Biotechnology | Yavatmal

Expected: 2026 | GPA: 7.5

Focus: Molecular Biology, Bioinformatics, and Genetic Engineering.

Higher Secondary Certificate (HSC)

Babasaheb Naik Arts and Science Highschool | Patur

GPA: 73%

Secondary School Certificate

(SSC) Shri Shivaji Highschool |

Mehkar GPA: 84%

TECHNICAL SKILLS

Languages & Tools	Bioinformatics	Wet Lab Techniques	Hardware & IoT
• Python (Pandas, Scikit-learn)	• NGS Data Analysis	• Plant Tissue Culture (PTC) & Synthetic seeds production	
• R (Bioconductor, DESeq2)	• GATK	• DNA/RNA Extraction & laboratory techniques	• Data analysis
• HTML, React.js, JS, Tailwind	• Sequence Alignment	• PCR & Electrophoresis techniques	• Sensor Integration & IOT integration
• C++ (Arduino IDE)	• CRISPR/Cas9 Concepts	• Microbial Bioprocessing	• precision agriculture
		• Mushroom Cultivation & culture preparation	

RESEARCH EXPERIENCE

Student Researcher & Presenter

Maharashtra State Inter-University Research Convention (Aavishkar)

- Selected to represent the university at the prestigious state-level research convention.
- Presented findings on precision agriculture and IoT integration to a panel of subject matter experts.
- Demonstrated proficiency in experimental design, statistical analysis, and scientific communication.

Student Intern

Organo Mushroom | Nagpur

- Cultivated various mushroom species using sterile techniques and controlled environments.
- Prepared substrate materials for mushroom cultivation following established protocols.
- Participated in industry events such as conferences and workshops to stay up-to-date on current trends in mushroom cultivation.

FEATURED PROJECTS

E.A.R.T.H. (Ecological Analysis & Research Technology Hub) | Ag-Tech IoT System

Designed a 'Digital Twin' smart pot system to detect abiotic stress in plants before visible wilting occurs. Engineered a custom Sap Flow and Canopy Temperature monitoring system using ESP32 and Python for real-time data visualization. Enables 'Responsive Fertigation,' reducing water usage.

Pathogen-Primer-Portal | Bioinformatics Web App

Developed an AI-enhanced database for plant pathologists to rapidly retrieve validated PCR primers for Cotton and Citrus diseases (e.g., CLCuV, HLB). Built using React.js and integrated Google API to provide on-demand disease summaries and alternative primer suggestions.

Ortho-Finder-Lite | Comparative Genomics Tool

Built a specialized client-side JavaScript tool implementing the Needleman-Wunsch algorithm for pairwise global sequence alignment. Allows instant calculation of Percent Identity scores between candidate genes without server-side processing overhead.

Bio-Encapsulated Controlled Release Fertilizer (Nutricapsule) | Sustainability Research

Engineered a biodegradable nutrient delivery system using ionic gelation (Sodium Alginate & Calcium Chloride). Created alginate beads that release nutrients via osmotic diffusion only when soil moisture drops, preventing fertilizer runoff.

HOBBIES AND INTERESTS

Active mentor for peers bridging the gap between biology and CS students. Smart Farming, Computational Biology, 3D Prototyping, Sustainable Agriculture. Exploring Novel Technologies & Innovation. For hobbies like to play table tennis .

Languages

- English
- Hindi
- Marathi

