

Indian Institute of Technology, Madras

Pravin Kannan | BT23M013

Process Automation and Control | Downstream Processing | System Identification & Modelling

Education			
PROGRAM	INSTITUTION	%/CGPA	Year
Masters, Bioprocess Engineering	IIT Madras	9.1	2023-2025
Bachelors, Industrial Biotechnology	Anna University, Chennai	8.56 (Distinction)	2018-2022
XII	Glazebrooke School, Salem	94.16%	2017-2018
X	Little Flower School, Salem	94.6%	2015-2016
Professional Experience			
Downstream Processing Trainee Perfect Day, Bangalore July 2022 – July 2023 (Full Time)	<ul style="list-style-type: none">Spearheaded Optimization of the Milk & Egg Protein Purification project, increasing purity by 90% and achieving 60% protein recovery.Skills/Worked on: AKTA Column Protein Purification, Process Development & Optimization, ATPS, Coacervation, DOE, Membrane Filtration, and Drying & Precipitation Technologies.Offered the chance to work as an Independent Scientist; Intern to Principal Scientist role.		
Founder - Cafevet IITM Nirmaan August 2023 Cohort August 2023 – January 2024	<ul style="list-style-type: none">Launched a B2B segment for alternative bean-free fermented coffee to reduce carbon footprint and to increase the supply of alternative coffee products to merchant chainsDespite initial efforts, operations were discontinued due to market viability challenges.Developed a business model and successfully presented at Startup BootCamp '24, and participated in Chennai Startup Week '24, gaining valuable insights into entrepreneurship.Skills: Product analysis, MS Office, Pitch Deck Preparation, Business Model Development		
Projects			
Process Control & Automation of Hyaluronic Acid Fermentation using Model Predictive Control (Master’s Thesis) June 2023 - Present Objective: To automate the control of glucose concentration in fermentation processes using an advanced MPC framework. Key Contributions: Developed and implemented an advanced MPC controller for precise glucose setpoint control using MATLAB and SIMULINK. Validation: Experimentally Validated the controller's performance in a hyaluronic acid fermentation for effective glucose setpoint tracking. Skills Applied: Mathematical Modeling, System Identification, Advanced Controller Design, Metrics Analysis, PAT, Upstream fermentation			
Development of Mycelium-Chitosan Hybrid Scaffold (Bachelor’s Thesis) February 2022 – May 2022 Objective: To evaluate and develop a potential platform for cultured meat Key Contributions: Successfully formulated a hybrid mycelium-chitosan scaffold and conducted detailed SEM to analyze scaffold porosity Skills Applied: Lyophilization, Media Preparation, Mushroom Cultivation, Spawn culturing			
Skills			
Skills: AKTA Chromatography, Column Packing, Process Development & Optimization, HPLC, Spray -Drying, Lyophilization, Bioreactor Setup & Monitoring, Membrane Filtration, Technology Transfer, Process Controller Design, Scale -Up & Cost Estimation, Fermentation process design, Statistical Data Analysis, System Modeling, Genomic Modelling, Inventory Management Technologies: MATLAB, Python, Simulink, Julia (Sci-ML), SuperPro Designer, SmartSheets, Advanced Excel, Power BI, MS Office, Prompt Engineering (AI), Jira Interpersonal Skills: Emotional Intelligence (EQ), Team Collaboration, Communication, Project Management.			
Achievements & Certifications			
Ventura Business Challenge NIT Trichy - Mentoring Phase		GATE BT 2022 – All India Rank 28	
NPTEL Bioreactor Design & Analysis - GOLD MEDALIST + ELITE		GFI India Smart Protein Challenge	
NISM Equity & Derivative Series VIII – F&O Trading		iGEM EPIC Bio-hackathon 2022 Winner – Flavora	
Service: Technical Advisor (Progo Foods - Plant-based Yogurt Startup) <ul style="list-style-type: none">Provided technical guidance on the formulation of plant-based yogurt with a focus on optimizing protein solubility, texture, and profileConducted experiments at their facility in CFTRI, Mysore to identify the most suitable plant-based proteins for their product			
Positions held: Lab Teaching Assistant – BT5111 (Mentored & Assisted 12 students in their lab experiments Course Teaching Assistant - BT1010 (Mentored & Evaluated 150+ students on their coursework)			
Extra-curricular Activities: Organized De’ Coco Authentic Foreign Drinks Stall in Sampradha’ 2019 (Anna University Cultural Event) for 2 days. <ul style="list-style-type: none">Three members stall with 50% profit return from the sale of authentic foreign juices.			
Languages: English, Tamil, Hindi & Sourashtra			