



Santosh Bhosale

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Previously, as a scientist, I applied my expertise in proteomics to develop and validate biomarkers for precision medicine. Collaborations with clinicians, mass spectrometry experts and bioinformaticians. Currently, I am leveraging the capabilities of AI and ML tools to accelerate the drug discovery process by collaborating with data engineers and scientists.

Research Proficiency

Wet lab

CELL CULTURE WORK, ANIMAL HANDLING AND CLINICAL SAMPLES, CELL & TISSUE SAMPLE LYSIS, SDS-PAGE ELECTROPHORESIS (1D, 2D) AND WESTERN BLOTTING

High throughput proteomics

TRYPsin DIGESTION, IMMUNODEPLETION OF SERUM &/OR PLASMA SAMPLES, LABEL FREE QUANTIFICATION (DIA AND DDA BASED), ISOBARIC LABELING, OFF-LINE HIGH PH FRACTIONATION, PTMS ENRICHMENT, IMMUNOPRECIPITATION EXPERIMENTS AND TARGETED PROTEOMICS MEASUREMENTS

Mass spectrometry

OPERATION AND TROUBLESHOOTING OF A RANGE OF INSTRUMENTS LTQ ORBITRAP VELOS PRO, Q EXACTIVE SERIES, ORBITRAP EXPLORIS 480 MASS SPECTROMETER, TSQ VANTAGE (ALL FROM THERMO SCIENTIFIC), TIMS TOF PRO (BRUKER), MALDI-TOF-MS (APPLIED BIOSYSTEM)

Mass spectrometry informatics tools

XCALIBUR, PROTEOME DISCOVERER (THERMO SCIENTIFIC), BRUKER TIMS CONTROL AND COMPASS HYSTAR, MAXQUANT AND PERSEUS, PROGENESIS, SKYLINE, INFERNO RDN, FRAGPIPE, SPECTRONAUT (BIOGNOSYS) AND DIA-NN

Chromatography instrumentation

EASY NLC SERIES (THERMO SCIENTIFIC), EVOSEP ONE

Automation platform

SP100 AUTOMATION INSTRUMENT (HAMILTON ROBOT), BIOMEK I-SERIES AUTOMATED WORKSTATION

Language and softwares

R, PYTHON, MACHINE LEARNING, JUPYTER ENVIRONMENT, OMICS DATA, CYTOSCAPE AND INGENUITY PATHWAY ANALYSIS

Data curation

DATA VALIDATION FOR OUTPUT GENERATED BY AI AND ML MODEL, WORKING IN AN AGILE ENVIRONMENT, DATABASE MINING, LLAMA PROMPT REFINEMENT

Employment

Product Manager

INNOPLEXUS CONSULTING PVT LTD

Pune - India

January 2025 -> Present

- Leading an effort to develop biomarker module for omics data
- Data extraction task from external databases (ClinicalTrials.gov, PubChem) using Llama and Gemini models
- Python scripting for automating biocuration
- Collaboration with data engineers and data scientists

Associate Scientific Manager

INNOPLEXUS CONSULTING PVT LTD

Pune - India

August 2024 -> November 2024

- Data curation for the outputs generated via different modules built to accelerate the drug discovery and development process using AI/ML approach
- Collaboration with data engineers and data scientists in an agile environment

Associate Biomedical Scientist

CEDARS-SINAI PRECISION BIOMARKER LABORATORIES

Los Angeles - USA

February 2023 -> June 2024

- Applied mass spectrometry based proteomics technology to study the complexity of proteome
- Lead end-to-end delivery projects related to the proteomics (From SOW to deliverable).
- Supervised technician, cross-team collaboration with bioinformatician, vendors and stakeholders

Postdoctoral Researcher

Odense - Denmark

PROTEIN RESEARCH GROUP, DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY, UNIVERSITY OF SOUTHERN DENMARK

January 2020 → December 2022

- Development of a post-translational modification (Cysteine, N-linked glycosylated and phospho modified) specific biomarkers discovery platform for the diagnosis of disease
- Analysis of PTMomics data to identify candidate plasma biomarkers to stratify ovarian cancer patients
- Supervise and work with technician and PhD students
- Work presentation internally and to the collaborators and, report writing

Postdoctoral Researcher

Turku - Finland

UNIVERSITY OF TURKU - TURKU BIOSCIENCE

November 2018 → December 2019

- Serum proteomics measurements to compare the effects of nutrition supplementation in infancy and, child and mother proteome correlation
- Analyzed temporal serum proteomes of celiac disease (CD) developing children
- Conducted the interactomics measurements and data analysis for several transcription factors of T cells
- Designed and presented practical courses on proteomics data analysis

Project Assistant

Pune - India

NATIONAL CHEMICAL LABORATORY

November 2009 → December 2011

- Proteomics laboratory work including protein extraction, digestion and cleanup, SDS-PAGE, MS analysis of glycosylated proteins, oligonucleotides and small molecules

Lecturer

Pune - India

JSPMs JSCOPR AFFILIATED TO UNIVERSITY OF PUNE

July 2008 → November 2009

- Taught theory and practicals for pharmaceutical biochemistry and pharmaceutical analysis to the bachelor of pharmacy students
- Supervised undergraduate pharmacy students
- Graded course assignments and examinations

Education

PhD

Turku - Finland

UNIVERSITY OF TURKU (TURKU BIOSCIENCE)

2012 → 2018

- Developed quantitative proteomics methodology for the analysis of human serum samples, including immunoaffinity depletion, protein digestion, isobaric labelling, label free quantification, offline-SCX fractionation, LC-MS/MS and data analysis
- Developed targeted SRM-LC-MS methods to monitor multiple protein targets
- Cellular proteomic analyses of Th17 and iTreg cells from mouse and human
- Teaching experience in proteomics data analysis (presented at a national meeting, 2017)

Master of Pharmacy (Pharmaceutical Chemistry)

Jodhpur - India

RAJASTHAN UNIVERSITY OF HEALTH SCIENCES (LACHOO MEMORIAL COLLEGE OF SCIENCE & TECHNOLOGY)

2005 → 2008

Bachelor of Pharmacy

Shirur - Pune

UNIVERSITY OF PUNE (SITABAI THITE COLLEGE OF PHARMACY)

2001 → 2005

Awards

Doctoral dissertation award

Turku - Finland

AWARDED WITH EUR 5000 FROM ORION PHARMA

2018

Doctoral dissertation award

Turku - Finland

AWARDED WITH EUR 5000 FROM THE MAUD KUUSTILA MEMORIAL FOUNDATION

2018

Travel grant

Turku - Finland

AWARDED WITH EUR 500 TO ATTEND COMPUTATIONAL PROTEOMICS COURSE AT ETH ZURICH FROM TURKU CENTRE FOR SYSTEM BIOLOGY

2015

Research grant

Turku - Finland

AWARDED WITH EUR 3500 FROM HOSPITAL DISTRICT OF SOUTHWEST FINLAND & TURKU CITY

2014

Dr. Ashok B. Vaidya prize

Mumbai - India

SECURED FIRST POSITION IN AN ORAL SESSION (6 MINUTE COMPETITION) ORGANIZED BY SOUTH ASIAN CHAPTER OF AMERICAN COLLEGE OF CLINICAL PHARMACOLOGY

2009

Publications

Analysis of the plasma proteome using iTRAQ and TMT-based Isobaric labeling	<i>Mass Spectrom Rev</i>
MOULDER R, BHOSALE SD, GOODLETT DR, LAHESMAA R	2018
Mass Spectrometry-Based Serum Proteomics for Biomarker Discovery and Validation	<i>Methods Mol Biol</i>
BHOSALE SD, MOULDER R, KOUVONEN P, LAHESMAA R, GOODLETT DR	2017
The progress and potential of proteomic biomarkers for type 1 diabetes in children	<i>Expert Rev Proteomics</i>
MOULDER R, BHOSALE SD, LAHESMAA R, GOODLETT DR	2017
Serum proteomes distinguish children developing type 1 diabetes in a cohort with HLA-conferred susceptibility	<i>Diabetes</i>
MOULDER R, BHOSALE SD, ERKKILÄ T, LAAJALA E, SALMI J, NGUYEN EV, KALLIONPÄÄ H, MYKKÄNEN J, VÄHÄ-MÄKILÄ M, HYÖTY H, VEIJOLA R, ILONEN J, SIMELL T, TOPPARI J, KNIP M, GOODLETT DR, LÄHDESMÄKI H, SIMELL O, LAHESMAA R	2015
Proteome wide reduction in AGE modification in streptozotocin induced diabetic mice by hydralazine mediated transglycation	<i>Sci Rep</i>
KESAVAN SK, BHAT S, GOLEGAONKAR SB, JAGADEESHAPRASAD MG, DESHMUKH AB, PATIL HS, BHOSALE SD, SHAIKH ML, THULASIRAM HV, BOPANA R, KULKARNI MJ	2013
Zoom-In A targeted database search for identification of glycation modifications analyzed by untargeted tandem mass spectrometry	<i>Eur J Mass Spectrom (Chichester)</i>
BHONSLE HS, KORWAR AM, KESAVAN SK, BHOSALE SD, BANSODE SB, KULKARNI MJ	2012
Comparative and chemical proteomic approaches reveal gatifloxacin deregulates enzymes involved in glucose metabolism	<i>J Toxicol Sci</i>
SURESH KK, BHOSALE SD, THULASIRAM HV, KULKARNI MJ	2011

Patent Applications

Means and methods for determining risk of type-1 diabetes by serum protein biomarkers	<i>Europe & USA</i>
MOULDER R, BHOSALE SD, GOODLETT D, LÄHDESMÄKI H, SIMELL S, LAHESMAA R	

References

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PROFESSOR OF BIOCHEMISTRY & MICROBIOLOGY AND DIRECTOR GENOME BC PROTEOME CENTRE AT UNIVERSITY OF VICTORIA, VICTORIA, BRITISH COLUMBIA, CANADA	
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AVP, KNOWLEDGE INFORMATICS, BAYLOR GENETICS, ATLANTA, GEORGIA, UNITED STATES	