

# Samuel Bharti

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## EDUCATION

2023 – Present Certificate in Translation of Biomedical Innovation to Clinical Practice  
2022 – Present Doctor of Philosophy (Biomedical Engineering | Bioinformatics)  
Department of Biomedical Engineering, The University of Alabama at Birmingham, Birmingham, Alabama, USA

2017 – 2021 Bachelor of Technology (Bioinformatics)  
Amity Institute of Biotechnology, Amity University, Noida, India

## PROFESSIONAL EXPERIENCE

Dec 2023 – present *Innovate Fellow*, Bill L. Harbert Institute for Innovation and Entrepreneurship, UAB, AL, USA

- Performing scientific, market, prior art, and patent research and analysis for UAB technologies
- Assessing the commercial viability of new inventions
- Identifying and preparing technology marketing materials

Feb 2021 – Jan 2023 *Chief Technical Officer*, FundU Games Private Ltd., Delhi, India

Led data-science and product development teams with a total of 8 employees at this early-stage startup and trained interns recruited from top engineering schools in India. Responsible for prototype design and weekly product deployment on AWS servers using docker containers.

Oct 2021 – Aug 2022 *Bioinformatics Engineer*, STEM-Away, Santa Clara, USA

Developed course structure and materials for Bioinformatics and Data Science domains.

June – Aug 2021 *Technical Lead (Bioinformatics Pathway)*, STEM-Away, California, USA

Led a team of 40 international students with a high technical diversity to develop and design [sMAP](#) (An R-shiny educational app for Microarray Data Analysis). It has been a one-of-a-kind experience leading students and junior working professionals to collaborate accounting different time zones and deliver the final working product in just 8 weeks.

Apr 2017 – Sep 2018 *Data Analyst*, Creature Retail Private Limited, DL, IN

Managed the company's e-commerce platform profiles (Amazon, etc.) and perform analysis of sales, product listing, and inventory management.

May – Jun 2018 *Data Operations Field Intern*, Park Smart, DL, IN

Collected and compiled data on the parking spots in the city.

Apr – Jul 2017 *Data Operations Intern*, QuickDoc E-Healthcare Private Limited, DL, IN

Promoted QuickDoc Healthcare App at the hospital clinics and collected user feedback from patients.

## RESEARCH EXPERIENCE

- Aug 2023 – Present      *Blazer Graduate Research Fellow*, Department of Biomedical Engineering, The University of Alabama at Birmingham, Alabama, USA
- Developing multi-omics integration tools and models for treatment and diagnosis of Neurofibromatosis Type 1 associated cancer.
- Aug 2020 – 2022      *International Research Volunteer*, Informatics Institute, The University of Alabama at Birmingham, Alabama, USA
- Developed and designed [SEAS](#) (Statistical Enrichment Analysis of Samples) software and documentation repository.
  - Developed UI interface and network visualization for [PAGER 3.0](#).
  - Assisted in the framework for the [PAGER WEB APP](#).
- Jan – Apr 2021      *Student Researcher*, Centre for Computational Biology and Bioinformatics, Amity University, Noida, India
- Design, Development, and Data curation of [GlucoKinaseDB](#) (A curated database of glucokinase modulators).
  - Development of [PepEngine](#) (A Bioactive peptide database).
- Apr – Sep 2020      *Student Researcher*, SCIS, Jawaharlal Nehru University, Delhi, India
- Developed microarray analysis pipeline in R to perform a meta-analysis of Parkinson's disease and identify blood biomarkers.
- Apr 2019 – Jul 2020      *Student Researcher*, Systems Biology and Data Analytics Research Lab, Amity University, Noida, India
- Development of VIRdb2.0 (A comprehensive resource for Vitiligo)
  - Developed R pipeline for Epidemiological modeling of COVID-19.
  - Reconstructed genome-scale metabolic model (PluriMetNet) for human embryonic stem cell (hESC) and performed Flux balance analysis using COBRA toolbox in MATLAB.

## AWARDS

Blazer Graduate Research Fellowship award for 16 months from Aug 2022 to Dec 2023 by UAB.

## SKILLS

- Programming Efficiency in R, Python, MATLAB, and Bash.
- Cloud Computing and Instance setup on AWS, OpenStack.
- Development of web servers/tools: R Shiny, Streamlit, PHP, React.
- Machine Learning, data processing, visualization, and analysis.
- Virtualization: Virtual box, cloud-based (Google, AWS), Docker
- Bioinformatics tools and databases, Clinical, Variant Analysis.
- Spatial Transcriptomics, scRNA-seq, RNA-seq, and Network Analysis.
- Genome-scale metabolic model construction and flux analysis

## POSTER / CONFERENCE / WORKSHOP / TALK

- Sep 27 – 29, 2023 CCTS Translational Training Symposium in Biloxi, MS
- Received a travel award and presented a poster on my work.
- Jun 24 – 27, 2023 Attended the 2023 NF Conference by Children Tumor Foundation.
- Mar 27 – 29, 2023 NHLBI Celebration Progenitor Cell and Translation Meeting
- Offered a travel award to deliver a talk and present a poster.
- Mar 15 – 17, 2023 MCBIOS 2023, University of Dallas
- Acceptance of multiple abstracts submitted as first and co-author to present in poster sessions and deliver a talk at MCBIOS hosted at the.
- Mar 8 – 10, 2023 Alabama Academy of Science (AAS) Meeting, Samford University
- Acceptance of poster to present.
- Oct 27, 2022 O'Neal Research Retreat, UAB
- Presented poster at O'Neal Cancer Research Retreat
- Sep 14 – 16, 2022 CCTS Translational Training Symposium in Mobile, Alabama
- Received a travel award and presented a poster on my work.
- Nov 23, 2021 AWS Deployment of R Shiny Bioinformatics App
- Delivered a talk on containerized bioinformatics and deployment using AWS followed by a [live demo](#) including launching an EC2 instance, connecting to an instance, and docker container deployment.
- June 22-25, 2020 Poster Presentation at RECOMB 2020 conference, Italy.
- Presented a poster highlighting the oxygen concentration levels at which the metabolic variation is observed in the hESC model [PluriMetNet]

## RESEARCH PUBLICATIONS

- [1] Siddharth Yadav, **Samuel Bharti**, Punith Mathur (2023). GlucoKinaseDB: A comprehensive, curated resource of glucokinase modulators for clinical and molecular research. Computational Biology and Chemistry  
<https://doi.org/10.1016/j.compbiolchem.2023.107818>
- [2] **Samuel Bharti**, Nikita Krishnan, Arian Veyssi, Maryam Momeni, Sneha Raj (2022). sMAP: An interactive microarray data analysis tool for early-stage researchers. bioRxiv  
<https://doi.org/10.1101/2022.05.27.492984>
- [3] Siddharth Yadav, **Samuel Bharti**, Priyansh Srivastava & Punith Mathur (2022). PepEngine: A Manually Curated Structural Database of Peptides Containing  $\alpha$ ,  $\beta$ - Dehydrophenylalanine ( $\Delta$ Phe) and  $\alpha$ -Amino Isobutyric Acid (Aib). International Journal of Peptide Research and Therapeutics.  
<https://doi.org/10.1007/s10989-022-10362-9>

- [4] Zongliang Yue, Radomir Slominski, **Samuel Bharti**, and Jake Y Chen (2021). PAGER Web APP: An interactive, online gene set and network interpretation tool of high-throughput functional genomics results. *Frontiers in Genetics*  
<https://www.frontiersin.org/articles/10.3389/fgene.2022.820361/abstract>
- [5] Nguyen, T. M., **Bharti, S.**, Yue, Z., Willey, C. D., & Chen, J. Y. (2021). Corrigendum: Statistical Enrichment Analysis of Samples: A General-Purpose Tool to Annotate Metadata Neighborhoods of Biological Samples. *Frontiers in Big Data*, 4, 804141.  
<https://doi.org/10.3389/fdata.2021.804141>
- [6] **Bharti, S.**, Sengupta, A., Chugh, P., & Narad, P. (2020). PluriMetNet: A dynamic electronic model decrypting the metabolic variations in human embryonic stem cells (hESCs) at fluctuating oxygen concentrations. *Journal of Biomolecular Structure and Dynamics*, 1–9.  
<https://doi.org/10.1080/07391102.2020.1860822>
- [7] Srivastava, P., Talwar, M., Yadav, A., Choudhary, A., Mohanty, S., **Bharti, S.**, Narad, P., & Sengupta, A. (2021). VIRdb 2.0: Interactive analysis of comorbidity conditions associated with vitiligo pathogenesis using co-expression network-based approach. *F1000Research*, 9, 1055.  
<https://doi.org/10.12688/f1000research.25713.2>
- [8] **Bharti, S.**, Narad, P., Chugh, P., Choudhury, A., Bhatnagar, S., & Sengupta, A. (2020). Multi-parametric disease dynamics study and analysis of the COVID-19 epidemic and implementation of population-wide intrusions: The Indian perspective. *MedRxiv*, 2020.06.02.20120360. <https://doi.org/10.1101/2020.06.02.20120360>

## LEADERSHIP AND VOLUNTEER EXPERIENCE

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|--------------------|---|
| Apr 2023 – Present | <i>President</i> , <a href="#">Informatics Club</a> , UAB, AL, USA<br>Leading organization and collaborating with university departments and Industries.  |
| 2022 – Mar 2023    | <i>Board Member</i> , <a href="#">Informatics Club</a> , UAB, AL, USA<br>Helped organize student engagement events and technical logistics.   |
| Aug 2017 – 2021    | <i>Class Representative</i> , AIB, Amity University, Noida, India<br>Acted as a prime official channel of communication between faculty and rest of the class, for all monitoring formalities. I also represented the student body at the department level to put forward student issues and suggestions to improve the learning environment. |
| Jan – May 2019     | <i>Volunteer</i> , Sachhi Saheli, Delhi, India (NGO)<br>Educated financially underprivileged girls aged 12 – 17 years about menstruation and its myths and taboos, in rural areas of the city.  |
| 2017 – 2019        | <i>Member</i> , Bioinformatics Club, Amity Institute of Biotechnology, Noida<br>Assisted in logistics and organization of club events at the university.  |
| Sep – Jan 2017     | <i>Volunteer</i> , J.A.X. Healthcare Foundation (NGO)<br>Assisted with cancer fundraising event coordination and planning.  |