Sishir Subedi

Bioinformatics professional with expertise in genomics, machine learning, and clinical diagnostics.

Vancouver, BC, Canada	+1 (236) 591-9729	subedisishir@gmail.com	🗄 in 🔋 🗭
EDUCATION			
PhD, Bioinformatics			2022 - 25
University of British Columbia, Vancouver, Canada			(exp Aug 25)
• Fellowship, three first-auth	or machine learning meth	ods papers	
MS, Computer Science (GPA 3.75) Texas A&M University, College Station, USA			2016 - 18
 Research assistantship, one co-author bioinformatics analysis paper Post-bacc, Computer Science (GPA 4.0) - University of Houston, USA 			2014 - 16
BS, Molecular Biology (GPA 3.98) Texas Tech University, Lubbock, USA			2008 - 11

• Awards for academic and research achievements

PROFESSIONAL EXPERIENCE

HOUSTON METHODIST HOSPITAL, TX, USA

Bioinformatician

- Design and implement bioinformatics pipelines for cancer assays, real-time pathology analytics, and clinical tools. Collaborate with internal cross-functional teams and third-party vendors for data management and systems integration in the CLIA-certified diagnostics laboratory.
- Sequencing (Illunima, Ion, Nanopore), pipelines (cancer panel, WES, TMB, COVID), workflow (snakemake, singularity, conda), EHR/clinical reporting (Java, SQL, Epic systems, Tableau), HPC (PBS Torque, Azure)

CSAT SOLUTIONS, TX, USA

System Analyst Intern

• Develop a centralized management system to support engineering business units. SharePoint ECM.

NEUDESIC, TX, USA

IT Associate Intern

• Deliver technology-driven solutions to Fortune 100 energy clients, custom application support for risk assessment, analytics, and quality assurance. SQL Server with ASP.NET applications.

WASHINGTON UNIVERSITY IN ST LOUIS, MO, USA

Research Technician

• Investigate the molecular mechanisms of learning and memory. Training in molecular biology techniques (cloning, qRT-PCR, in situ hybridization, western blotting) including mouse genetics, cell culture, and fluorescence microscopy.

Jun 2018 - Oct 2021

Dec 2014 - Apr 2016

Jun 2016 - Aug 2016

Jun 2011 - May 2013

RESEARCH EXPERIENCE

BRITISH COLUMBIA CANCER CENTER, BC, CANADA

Graduate Research Assistant (PhD)

- Develop novel computational methods for large-scale omics data for interpretable deep learning models, scalable annotation, and multimodal data integration.
- Languages (Python, C++, R, Bash), deep learning (NNs, CNNs, RNNs, Transformers, GNNs, VAEs), libraries (PyTorch, scikit-learn), data science (feature engineering, latent variable models, optimization)

TEXAS A&M UNIVERSITY, TX, USA

Graduate Research Assistant (MS)

• Develop machine learning methods to analyze the lifecycle of a pathogen. Bulk RNAseq analysis pipelines.

BAYLOR COLLEGE OF MEDICINE, TX, USA

Research Assistant

• First year of biomedical graduate program with rotation projects in three labs (in-vitro drug screening, neuronal stem cells, and genetic model for ALS disease). Transfer to pursue MS in CS.

TEXAS TECH HEALTH SCIENCE CENTER, TX, USA

TTU-HHMI Research Scholar (BS)

• Study of signaling pathways during embryogenesis in drosophila. Genetic crosses and expression analysis.

SELECTED PUBLICATIONS

- **S Subedi** and Y Park. (2025) Decomposing patient heterogeneity of single-cell cancer data by cross-attention neural networks (In prep).
- **S Subedi**, T. Sumida, and Y Park. (2024) A scalable approach to topic modelling in single-cell data by approximate pseudobulk projection. Life Science Alliance, 7(10).
- **S Subedi** and Y Park. (2023) Single-cell pair-wise relationships untangled by composite embedding model. Iscience, 26(2).
- P. Christensen, R. Olsen, S. Long, **S Subedi**, *et al.* (2022) Delta variants of SARS-CoV-2 cause significantly increased vaccine breakthrough COVID-19 cases in Houston, Texas. The American journal of pathology 192 (2), 320-331.
- P. Hodjat, P. Christensen, **S. Subedi**, *et al.* (2021) The reemergence of seasonal respiratory viruses in Houston, Texas, after relaxing COVID-19 restrictions. Microbiology Spectrum 9 (2), e00430-21.
- S. Jianming, **S. Subedi**, *et al.* (2021) Identifying possible germline variants from tumor-only sequencing of hematological malignancies. Leukemia & Lymphoma 62, no. 2: 482-485.
- G. Eskandari, **S. Subedi**, *et al.* (2021) Implementing flowDensity for automated analysis of bone marrow lymphocyte population. Journal of Pathology Informatics 12 (1), 49.

Jan 2022 - Present

Jun 2013 - Jul 2014

Aug 2016 - Jan 2018

Мау 2009 - Арг 2011

- S. Long, R. Olsen, [et al., including **S.Subedi**]. (2020) Molecular Architecture of Early Dissemination and Massive Second Wave of the SARS-CoV-2 Virus in a Major Metropolitan Area. mBio, 11(6), e02707-20.
- A. Bandekar, **S. Subedi**, T. Ioerger, C. Sassetti. (2020) Cell cycle-associated expression patterns predict gene function in mycobacteria. Current Biology, 30(20), 3961-3971.
- E. Salazar, K. Perez, [et al., including **S. Subedi**]. (2020) Treatment of Coronavirus Disease 2019 (COVID-19) Patients with Convalescent Plasma. The American Journal of Pathology, 190(8), 1680–1690.
- P. Christensen, **S. Subedi**, *et al.* (2020) Development and Validation of Houston Methodist Variant Viewer version 3: Updates to an application to support clinical interpretation of next-generation sequencing data for cancer. JAMIA open, 3(2), 299-305.
- **S. Subedi**, Y. Li, C. Early, *et al.* (2016) System for the Analysis of EEG Data and Brain State Modeling. Emerging Trends in Computational Biology, Bioinformatics, and Systems Biology - Systems & Applications, 2016, 447-465.
- A. Chan, C. Early, **S. Subedi**, Y. Li, and H. Lin. (2015) Systematic analysis of machine learning algorithms on EEG data for brain state intelligence. IEEE International Conference on Bioinformatics and Biomedicine (BIBM) (pp. 793-799).

AWARDS

- Doctoral Fellowship (4YF), Faculty of Science Bioinformatics, UBC, 2022
- Full Tuition Scholarship and Research Assistantship, Dept. of Computer Science, TAMU, 2016
- Outstanding Student in Computer Science, College of Sciences, UHD, 2015
- Full Tuition Scholarship Award and Research Assistantship, BCM, 2013
- Earl Camp Award for Outstanding Graduating Senior, Dept. of Biological Sciences, TTU, 2011
- Dr. Richard L. Blanton Endowed Scholarship for Undergraduate Research, HHMI-TTU Research, 2010
- Presidential Scholarship, College of Sciences, TTU, 2009