

Stanford



Alok Kumar Jha

- Instructor, Cardiovascular Institute
- Instructor, Pediatrics - Endocrinology and Diabetes

Bio

BIO

Alok is a translational researcher working in systems biomedicine, healthcare data science, and disease modeling. His expertise uses AI, ML models for multi-dimensional omics, and diagnostic imaging data to predict risk, disease association, and relapse. His background in tumorigenesis, metastasis, tumor evolution, and cell-cell communication, yielded clinically translational biomarkers for gynecologic cancers, breast cancer, pancreatic cancer, multiple myeloma, and prostate cancer. He also developed several novel methods for biomarker discovery such as graph motif mining, Kirchoff's law traversal, graph convolution neural network, and the semantic web. His recent research is focused on explaining mosaicism genetics for cardiac amyloidosis and multiple myeloma.

ACADEMIC APPOINTMENTS

- Instructor, Cardiovascular Institute
- Instructor, Pediatrics - Endocrinology and Diabetes
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute

ADMINISTRATIVE APPOINTMENTS

- Affiliated Faculty, Center for Artificial Intelligence in Medicine & Imaging, (2020- present)

HONORS AND AWARDS

- (CLARIFY) Cancer Long Survivors Artificial Intelligence Follow Up Co-PI, European Commission Horizon2020 (H2020-SC1-DTH-2019) <https://cordis.europa.eu/project/id/875160> (1 January 2020-31 December 2022)

PROFESSIONAL EDUCATION

- PhD, Data Science Institute, National University of Ireland, Galway , Data Science, Cancer Genomics, Machine Learning, Biomarker Discovery (2019)
- Research Intern, Beth Israel Deaconess Medical Center (Exchange Student), Harvard University , Pancreatic and prostate cancer Metastasis (2017)
- MS, Manipal University, Udupi, India , Medical Data Science, Genomics (2014)
- BS, Hemchandracharya North Gujarat University, Gujarat, India , Electronics and Communication (2010)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Systems biomedicine, Genetic Risk score, Tumor modelling, Radiomics

Publications

PUBLICATIONS

- **A community effort to create standards for evaluating tumor subclonal reconstruction.** *Nature biotechnology*
Salcedo, A., Tarabichi, M., Espiritu, S. M., Deshwar, A. G., David, M., Wilson, N. M., Dentre, S., Wintersinger, J. A., Liu, L. Y., Ko, M., Sivanandan, S., Zhang, H., Zhu, et al
2020; 38 (1): 97–107
- **Clinical impact of COVID-19 on patients with cancer (CCC19): a cohort study.** *Lancet (London, England)*
Kuderer, N. M., Choueiri, T. K., Shah, D. P., Shyr, Y., Rubinstein, S. M., Rivera, D. R., Shete, S., Hsu, C. Y., Desai, A., de Lima Lopes, G., Grivas, P., Painter, C. A., Peters, et al
2020
- **Gene Signatures to Distinguish Amyloid Cardiomyopathy Risk in Multiple Myeloma Patients**
Jha, A., Morgado, I., Lee, D. J., Alexander, K., Tsai, C., Schimmel, K., Ward, J., Witteles, R., Liedtke, M., Liao, R., Dangwal, S.
LIPPINCOTT WILLIAMS & WILKINS.2019
- **GenomicsKG: A Knowledge Graph to Visualize Poly-Omics Data** *Journal of Advances in Health*
Jha, A., Khan, Y., Verma, G., Zehra, D., Mehmood, Q., Sahay, R., Rebholz-Schuhmann, D., Dangwal, S., d'Aquin, M.
2019; 2 (2): 70-84
- **Abstract 750: Gene Signatures to Distinguish Amyloid Cardiomyopathy Risk in Multiple Myeloma Patients** *Circulation Research*
Jha, A., Morgado, I., Lee, D. ., Alexander, K., Tsai, C., Schimmel, K., Ward, J., Witteles, R., Liedtke, M., Liao, R., Dangwal, S.
2019
- **Alteration in ventricular pressure stimulates cardiac repair and remodeling.** *Journal of molecular and cellular cardiology*
Unno, K., Oikonomopoulos, A., Fujikawa, Y., Okuno, Y., Narita, S., Kato, T., Hayashida, R., Kondo, K., Shibata, R., Murohara, T., Yang, Y., Dangwal, S., Sereti, et al
2019
- **One Size Does Not Fit All: Querying Web Polystores** *IEEE ACCESS*
Khan, Y., Zimmermann, A., Jha, A., Gadepally, V., D'Aquin, M., Sahay, R.
2019; 7: 9598–9617
- **Ranked MSD: A New Feature Ranking and Feature Selection Approach for Biomarker Identification** *Cross Domain Conference for Machine Learning and Knowledge Extraction co-located with ARES 2019*
Verma, G., Jha, A., Rebholz-Schuhmann, D., Madden, M. G.
2019
- **Determination of system level alterations in host transcriptome due to Zika virus (ZIKV) Infection in retinal pigment epithelium** *SCIENTIFIC REPORTS*
Singh, P., Khatri, I., Jha, A., Pretto, C. D., Spindler, K. R., Arumugaswami, V., Giri, S., Kumar, A., Bhasin, M. K.
2018; 8: 11209
- **Using Machine Learning to Distinguish Infected from Non-infected Subjects at an Early Stage Based on Viral Inoculation** *International Conference on Data Integration in the Life Sciences*
Verma, G., Jha, A., Rebholz-Schuhmann, D., Madden, M. G.
2018
- **Features' compendium for machine learning in NGS data Analysis** *Journal of Advanced Research in Biology*
Jha, A., Khare, A., Randeep Singh, et al
2018; 1 (2)
- **Deep Convolution Neural Network Model to Predict Relapse in Breast Cancer**
Jha, A., Verma, G., Khan, Y., Mehmood, Q., Rebholz-Schuhmann, D., Sahay, R., Wani, M. A., Kantardzic, M., Sayedmouchaweh, M., Gama, J., Lughofer, E.
IEEE.2018: 351–58
- **Linked Data Based Multi-omics Integration and Visualization for Cancer Decision Networks** *International Conference on Data Integration in the Life Sciences*
Jha, A., Khan, Y., Mehmood, Q., Rebholz-Schuhmann, D., Sahay, R.

2018

- **FedS: Towards Traversing Federated RDF Graphs**
Mehmood, Q., Jha, A., Rebholz-Schuhmann, D., Sahay, R., Ordonez, C., Bellatreche, L.
SPRINGER INTERNATIONAL PUBLISHING AG.2018: 34–45
- **E-selectin ligands recognised by HECA452 induce drug resistance in myeloma, which is overcome by the E-selectin antagonist, GMI-1271** *LEUKEMIA*
Natoni, A., Smith, T. G., Keane, N., McEllistram, C., Connolly, C., Jha, A., Andrulis, M., Ellert, E., Raab, M. S., Glavey, S. V., Kirkham-McCarthy, L., Kumar, S. K., Locatelli-Hoops, et al
2017; 31 (12): 2642–51
- **Towards precision medicine: discovering novel gynecological cancer biomarkers and pathways using linked data** *JOURNAL OF BIOMEDICAL SEMANTICS*
Jha, A., Khan, Y., Mehdi, M., Karim, M., Mehmood, Q., Zappa, A., Rebholz-Schuhmann, D., Sahay, R.
2017; 8: 40
- **A linked data approach to discover HPV oncoproteins and RB1 induced mutation associations for the retinoblastoma research**
Jha, A., Khan, Y., Rebholz-Schuhmann, D., Sahay, R.
AMER ASSOC CANCER RESEARCH.2017
- **Drug Dosage Balancing Using Large Scale Multi-omics Datasets**
Jha, A., Mehdi, M., Khan, Y., Mehmood, Q., Rebholz-Schuhmann, D., Sahay, R., Wang, F., Yao, L., Luo, G.
SPRINGER INTERNATIONAL PUBLISHING AG.2017: 81–100
- **Querying Web Polystores**
Khan, Y., Zimmermann, A., Jha, A., Rebholz-Schuhmann, D., Sahay, R., Nie, J. Y., Obradovic, Z., Suzumura, T., Ghosh, R., Nambiar, R., Wang, C., Zang, H., BaezaYates, et al
IEEE.2017: 3190–95
- **A 13-Glycosylation Gene Signature in Multiple Myeloma Can Predicts Survival and Identifies Candidates for Targeted Therapy (GiMM13)**
Connolly, C., Jha, A., Natoni, A., O'Dwyer, M. E.
AMER SOC HEMATOLOGY.2016
- **A Linked Data Visualiser for Finite Element Biosimulations** *INTERNATIONAL JOURNAL OF SEMANTIC COMPUTING*
Mehdi, M., Khan, Y., Jares, J., Freitas, A., Jha, A., Sakellarios, A., Sahay, R.
2016; 10 (2): 219–45