

Multi-Modal Biomedical Data Fusion — Hands-on

Build end-to-end pipelines that combine genomics/proteomics/metabolomics with clinical tables, imaging-derived features and biomedical text. Learn data alignment, missing-modality handling, representation learning, and modern fusion architectures to deliver stronger, more generalizable models with clear reporting.

Multi-Modal Biomedical Data Fusion

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Session Index

[Session 1 — Modalities, Alignment & Fusion Basics](#) [Session 2 — Representation Learning & Contrastive](#) [Session 3 — Cross-Modal Transformers & Missingness](#) [Session 4 — Mini Capstone: Multi-Modal Pipeline](#)

Session 1

Fee: Rs 14,200 [Apply Now](#)

Modalities, Alignment & Fusion Basics

Modalities & schemas

[omics](#) [clinical EHR](#) [imaging/text](#)

Fusion strategies

[early/late/intermediate](#) [co-training/co-regularization](#)
[feature vs decision](#)

ID/linkage & temporal alignment

[patient keys](#) [visit windows](#) [sampling sync](#)

Session 2

Fee: Rs 19,600 Apply Now

Representation Learning & Contrastive

Latent spaces & embeddings

autoencoders/VAEs CCA/DeepCCA manifold learning

Contrastive & alignment losses

InfoNCE/Triplet Barlow Twins/SimCLR cross-modal distillation

Toolchain & data loaders

PyTorch/Lightning HuggingFace tf.data

Session 3

Fee: Rs 25,200 Apply Now

Cross-Modal Transformers & Missingness

Architectures for fusion

co-attention late-fusion transformers gated fusion

Handling missing modalities

mixture-of-experts token masking imputation/adapters

Evaluation, robustness & ablations

modality drop tests domain shifts calibration/uncertainty

Session 4

Fee: Rs 31,800 Apply Now

Mini Capstone: Multi-Modal Pipeline

Assemble a fusion model on a real dataset

Theory + Practical

Explainability & reporting

modality attributions **counterfactuals** **model card**

Deliverables: code, metrics & PDF brief

notebook/script **ablation table** **calibration plots**