Survival Analysis & Risk Models — Cox, RSF, DeepSurv — Hands-on

Learn how to model time to event outcomes in biomedical and omics studies. This module covers censoring, Kaplan–Meier curves, Cox models, random survival forests and DeepSurv style deep learning, with a focus on hazard ratios, discrimination, calibration and clinically meaningful risk score reporting in R and Python.

Survival Analysis & Risk Models — Cox, RSF, DeepSurv

Help Desk · WhatsApp

Session Index

Session 1

Fee: Rs 8800 Apply Now

Survival Data & Censoring Foundations

Survival data structures and notation

time to event outcomes | **event indicators and censoring flag** | **right censoring intuition**

Censoring types and assumptions

administrative vs loss to follow up | **independent censoring idea** | **truncation overview**

Non parametric survival curves

Kaplan–Meier estimation **median survival and confidence intervals** **log rank tests and group comparisons**

Session 2

Fee: Rs 11800 Apply Now

Cox Proportional Hazards & Extensions

Cox proportional hazards model

hazard vs survival functions **hazard ratios and interpretation** **partial likelihood idea**

Model building and diagnostics

choice of covariates and transformations **Schoenfeld residuals and PH checks** **influential observations**

Extensions and special cases

time dependent covariates **stratified Cox models** **competing risks overview**

Session 3

Fee: Rs 14800 Apply Now

Machine Learning Survival — RSF & Metrics

Random survival forests (RSF)

ensemble idea for censored data **survival trees and splitting rules** **variable importance concepts**

Survival performance metrics

concordance index (C index) **time dependent ROC and AUC** **integrated Brier score**

Cross validation for survival models

patient level vs record level splits | nested resampling concepts | hyperparameter tuning for RSF

Session 4

Fee: Rs 18800 Apply Now

DeepSurv, Risk Scores & Reporting

DeepSurv style neural survival models

link to Cox proportional hazards loss | network architecture and outputs | regularization and overfitting control

Risk score calculation and stratification

linear predictors and risk groups | calibration plots for survival | decision curve analysis concepts

Deliverables: survival model and report pack

KM and adjusted survival curves | C index, Brier and calibration summary | R / Python scripts and model object