💻 Hands-on: Patient Stratification Methods

📊 Clustering Methods

K-means, hierarchical clustering, and consensus clustering to identify patient subgroups based on molecular profiles

📈 Risk Score Development

Cox regression and machine learning models to create prognostic scores for treatment decisions

⏱ Survival Analysis

Kaplan-Meier curves, log-rank tests, and Cox proportional hazards models for outcome prediction

🔄 Treatment Interaction

Subgroup analysis to identify biomarker-treatment interactions and optimal therapy assignment

📉 Visualization

✅ Cross-validation

Heatmaps, forest plots, and interactive dashboards for communicating stratification results

Internal validation with bootstrap and external validation in independent cohorts

🛠️ Tools & Packages

scikit-learn	lifelines	survminer
ComplexHeatmap	ggplot2	plotly