

06 Temporal structure

Figure 1 coordinate 6 | Subitems 19, 20, 21

Machine learning

19 4D / 3D+t

Latent -> 3D states over time
One 3D object changes in time
Keep space-time dependence
Test held-out temporal states

20 Frame interpolation

Endpoints + time -> interior state
Fill the observed time interval
Keep endpoints and time order
Test withheld intermediate states

21 Action / world model

History + action -> next state
Learn dynamics, not a policy
Retain response to given actions
Test new actions / rollout drift

Computer vision

— MAV3D dynamic scene

Text -> dynamic radiance field
Render at chosen time and view
Keep cross-view object identity
Test view and motion coherence

— FILM intermediate frames

Two images -> interior frames
Handle large in-between motion
Keep identity across endpoints
Test occlusion / withheld frames

— GameNGen interactive views

Past frames + actions -> frame
Generate an interactive rollout
Keep state under player input
Test action effects, not replay

Medical image analysis

— CHearT cardiac anatomy

Clinical factors -> 4D anatomy
Generate a cardiac sequence
Target anatomy / cycle structure
Test true volume-time curves

— DDM cardiac MR interpolation

Diastole / systole -> interim MR
Learn a deformation-based path
Target source anatomy / topology
Test acquired in-between phases

— SonoWorld probe control

History + pose -> ultrasound
Ground control in tracked scans
Target pose-dependent anatomy
Test new actions / round-trip drift