3D and 4D World Modeling

1 VideoGen **2** OccGen **3** LiDARGen

Definition (Sec 2) → **Methodology (Sec 3)** → **Data & Eval (Sec 4)** → **Applications (Sec 5)** → **Future Trend (Sec 6)**
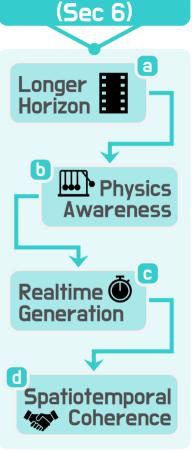
Definition (Sec 2)
- **a** Data Engine
- **b** Action Interpreter
- **c** Neural Simulator
- **d** Scene Reconstructor

Methodology (Sec 3)
1 **2** **3**
- **a** Geometric Cond.
- **b** Action-Based Cond.
- **c** Semantic Cond.

Data & Eval (Sec 4)
Databases
- Motional
- KIT Karlsruher Institut für Technologie
- Lyft
- CARLA
- ARGO AI
- WAYMO
- HESAI
- NAVSIM

Evaluations
- Generation
- Forecasting
- Reconstruction
- Action-Follow
- Physical Law

Applications (Sec 5)
- **a** ADAS
- **b** Robotics
- **c** AR/VR
- **d** Games
- **e** Digital
- **f** Other

Future Trend (Sec 6)
- **a** Longer Horizon
- **b** Physics Awareness
- **c** Realtime Generation
- **d** Spatiotemporal Coherence