AI/ML as a Key Enabler of 6G Networks

Methodology, Approach & AI-Mechanisms in SNS JU

AI Models in SNS: Monitoring, Complexity, & Explainability

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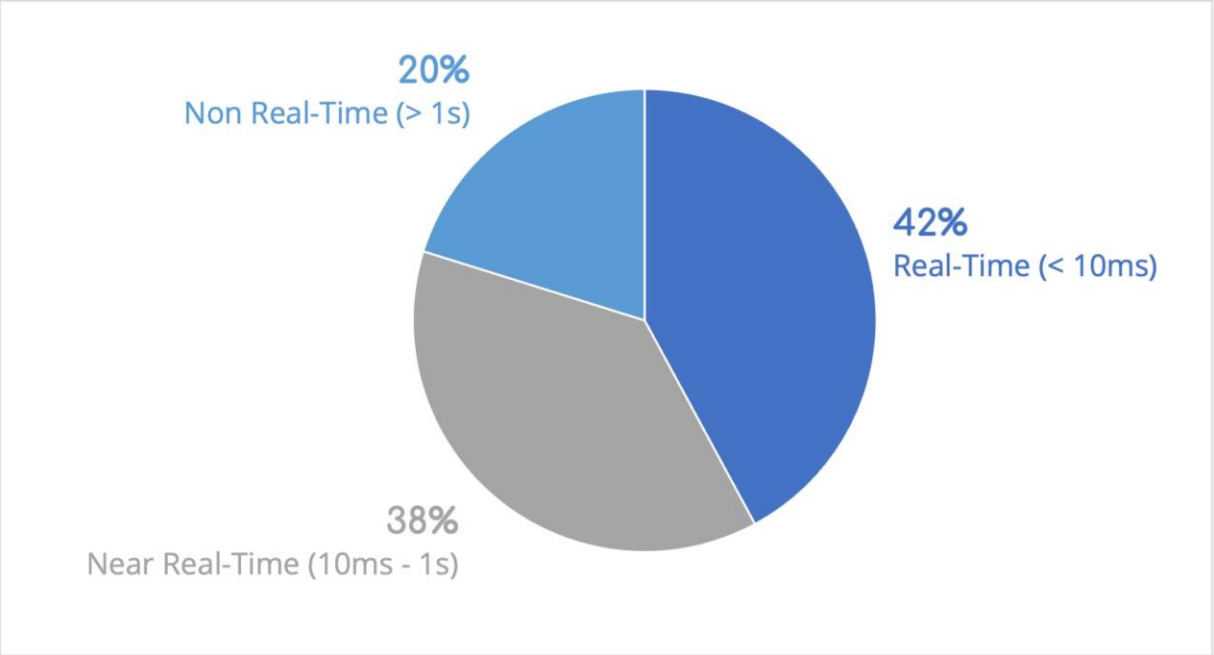
Model Complexity / Timescales of Operations

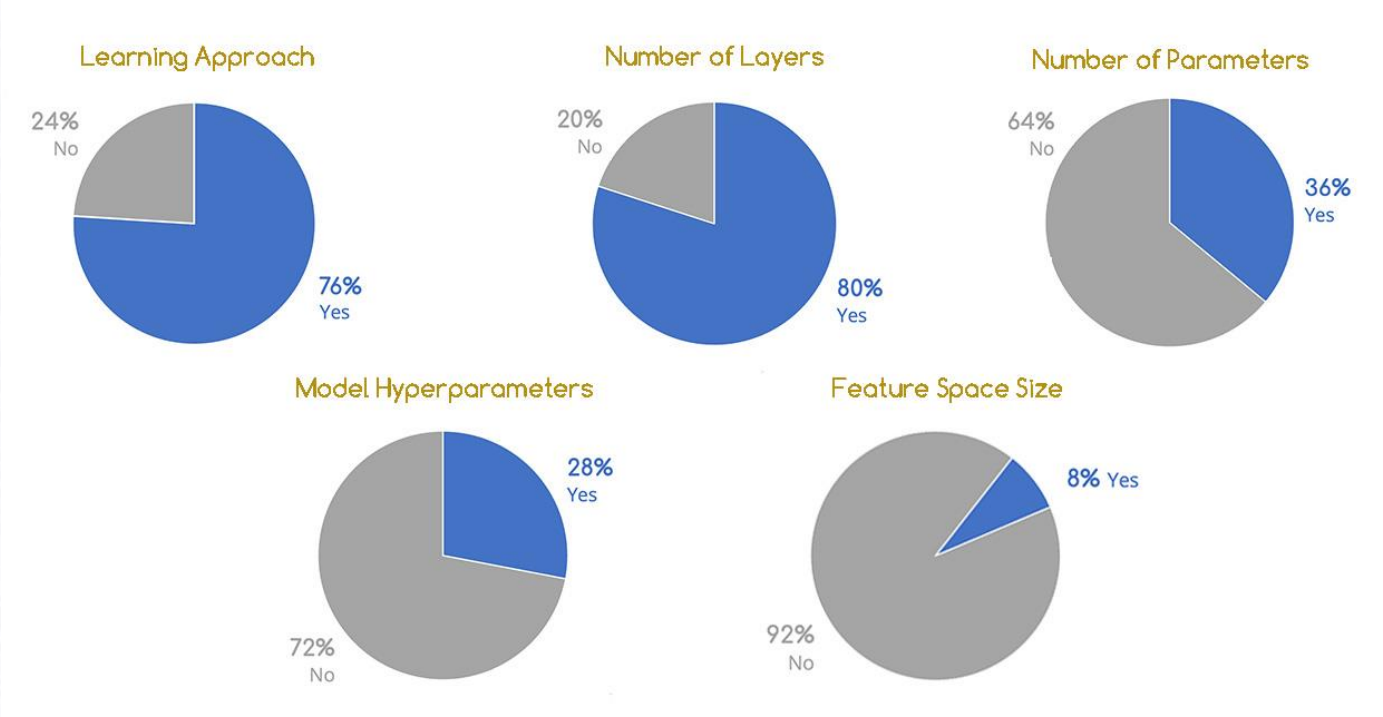
Inference Timescale



- Real-time and Near real-time processing are the majority, emphasizing the focus on latency-sensitive applications.
- Non-real-time solutions are less common, addressing use cases where latency is less critical.

Model Complexity / Timescales of Operations

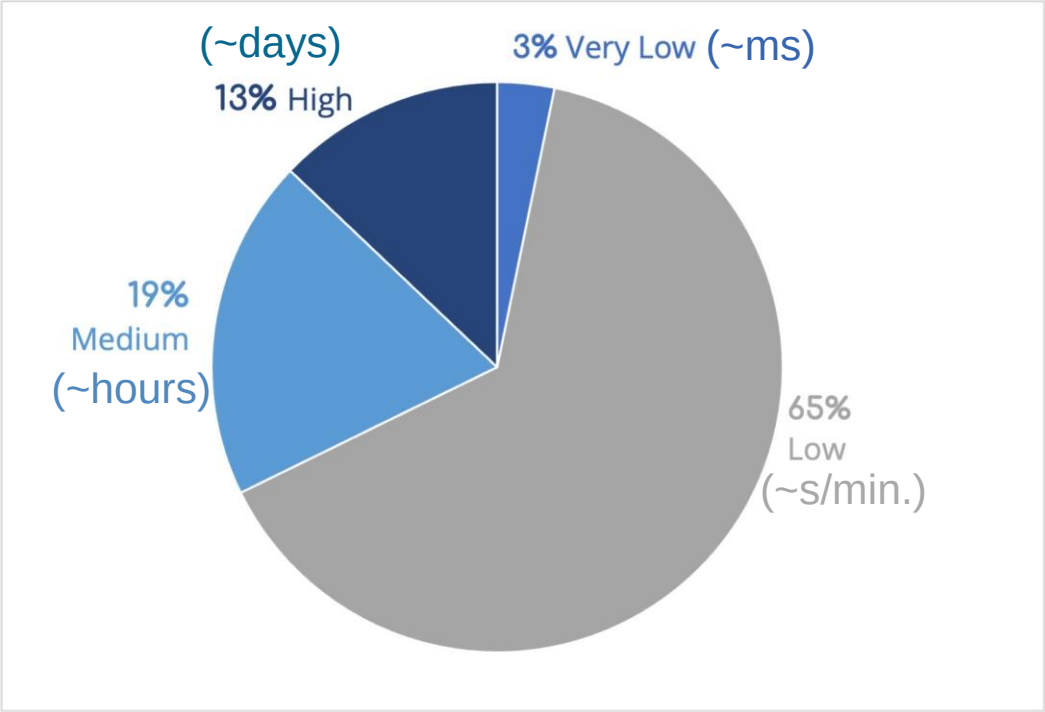
Top 5 Factors contributing to Model Complexity



- Model architecture and learning approach drive complexity in SNS projects
- Input dimensionality is less emphasized in complexity assessment

Model Complexity / Timescales of Operations

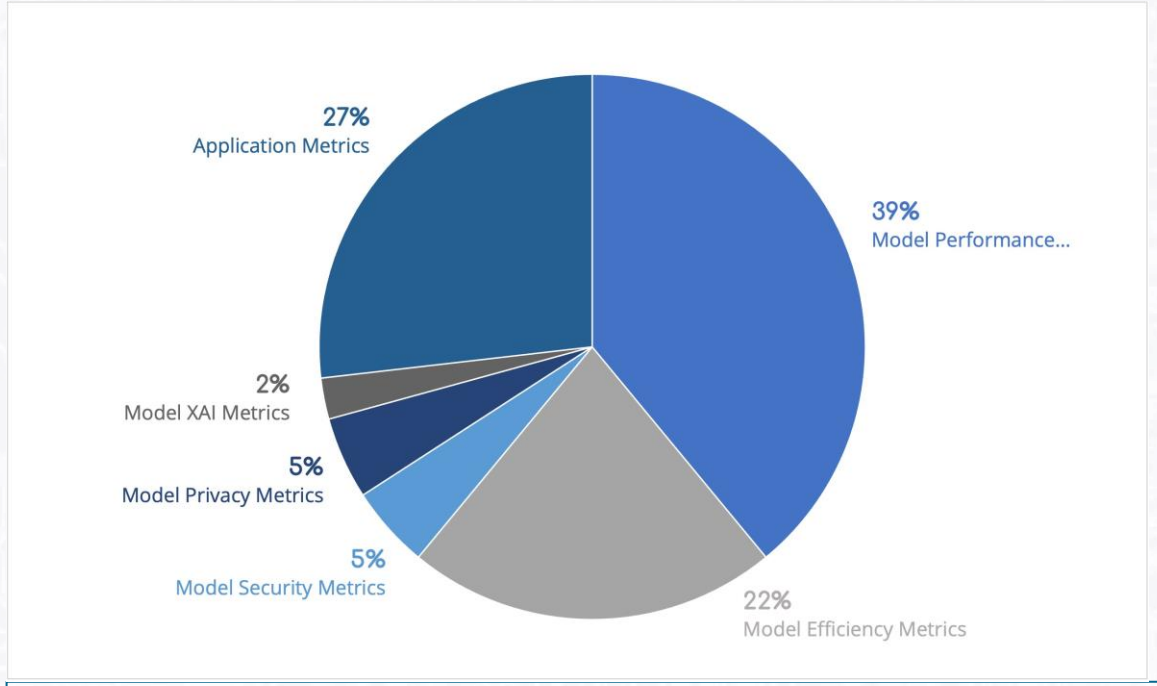
Model Complexity Categorization based on Training Time



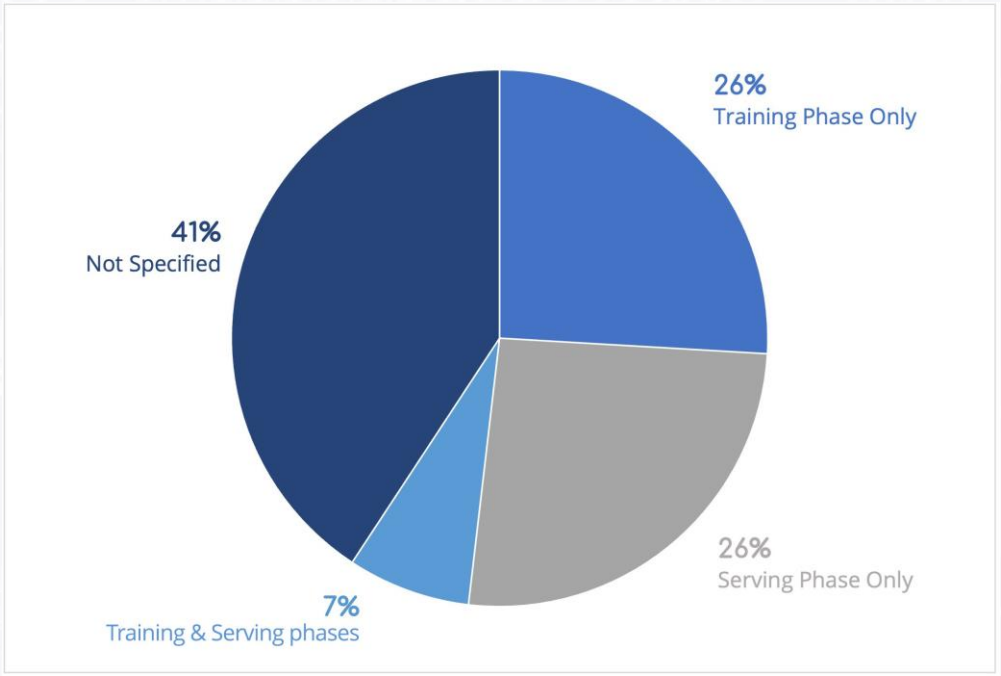
- The majority of models exhibit low complexity, relying on shallow ML and DL approaches
- Only 13% of models exhibit **High complexity**, associated with **Generative AI** and requiring days for training.

Model Monitoring

Model Monitoring Metrics



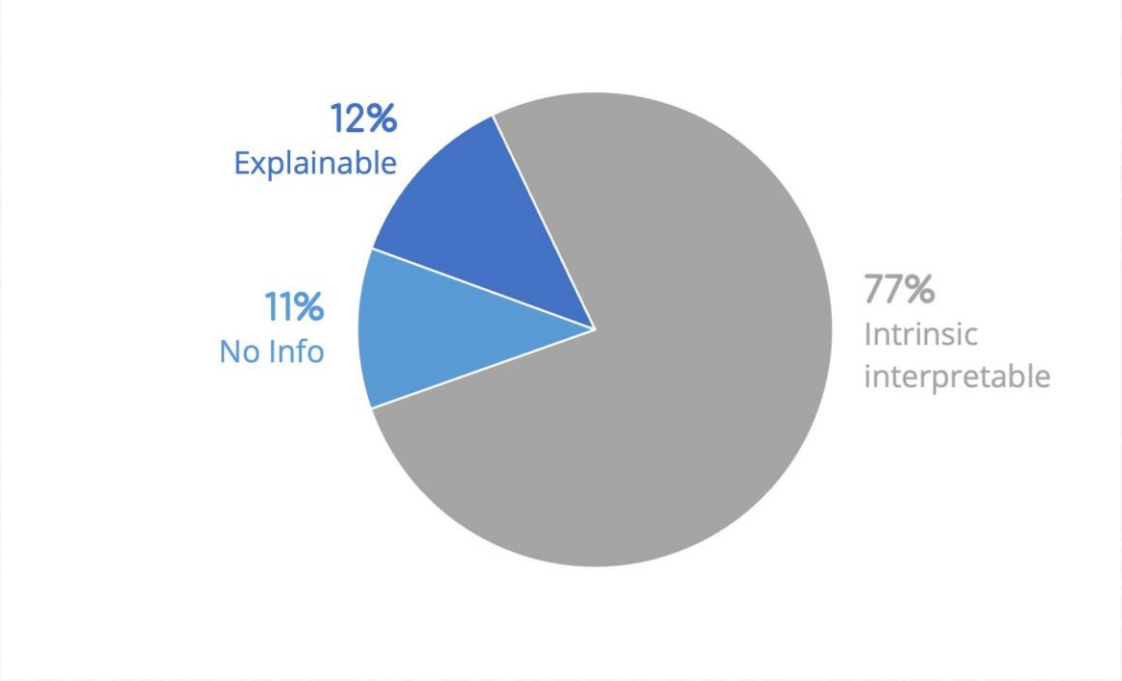
Model Monitoring Phases



- Model performance and application metrics dominate
- AI trustworthiness metrics receive less attention
- Few projects monitor models during both training and serving phases, highlighting a gap in continuous monitoring

Model Explainability

XAI Methods



- Most of the AI/ML models are interpretable by design
- Only 12% use Post hoc explainability methods (e.g., LIME, SHAP)

6GSNS

6TH GENERATION SMART NETWORKS & SERVICES

THANK YOU FOR YOUR ATTENTION

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