OVERALL MOTIVATION AND GOALS

Musical Models with a Purpose: support serious applications in music research and education.
Required Model Properties: **stylistically faithful**, **tightly controllable**, **transparent**, **explainable**.

Modeling Principles:	*Modeling Domains:*	**Music Generation**	**Music Performance**	**Expectancy ("Listening")**
Structured Modeling *(rather than end-to-end learning)*		Multi-task and transfer learning; learning re-usable and disentangled representations; intuitive mid-level concepts and abstractions; concept-based explanations; …		
Multi-level & Multi-scale Modeling *(rather than note-by-note prediction)*		Multi-resolution prediction at different time scales; multi-level models; joint prediction of multiple musical dimensions; integrating generation & expectancy; …		
Exploiting Musical Knowledge *(rather than pure data-driven learning)*		Integrate deep learning with symbolic/probabilistic reasoning; musical language models; exploit music-analytical concepts & tools; musically informed loss functions and model architectures; …		

Concrete Simulation & Application Scenarios:

Musicological Studies (with musicologists)
Creative / Didactic Tools and Exhibits (science museums etc.)
Public Educational Events ("what-if" concerts etc.)
Web-based Simulators