



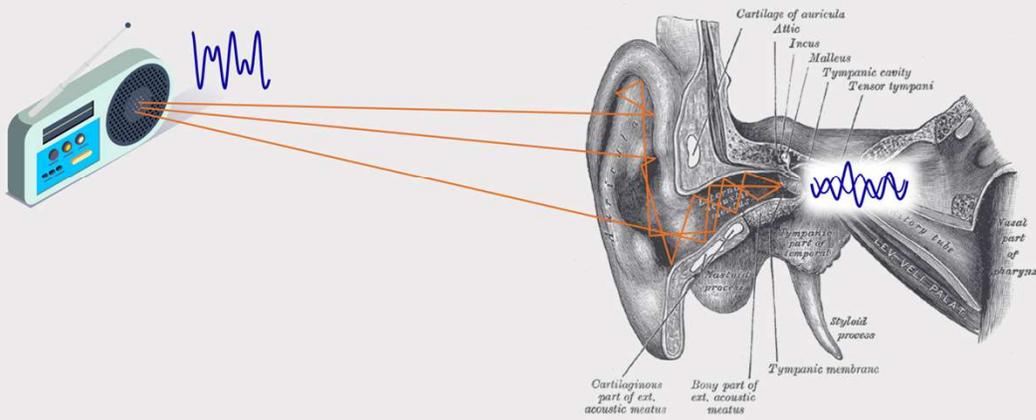
Task 4.4: Sound Engineering

RAISE All-Hands Meeting, Nov 2021
Eric Michael Sumner, University of Iceland



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Listening to the Environment

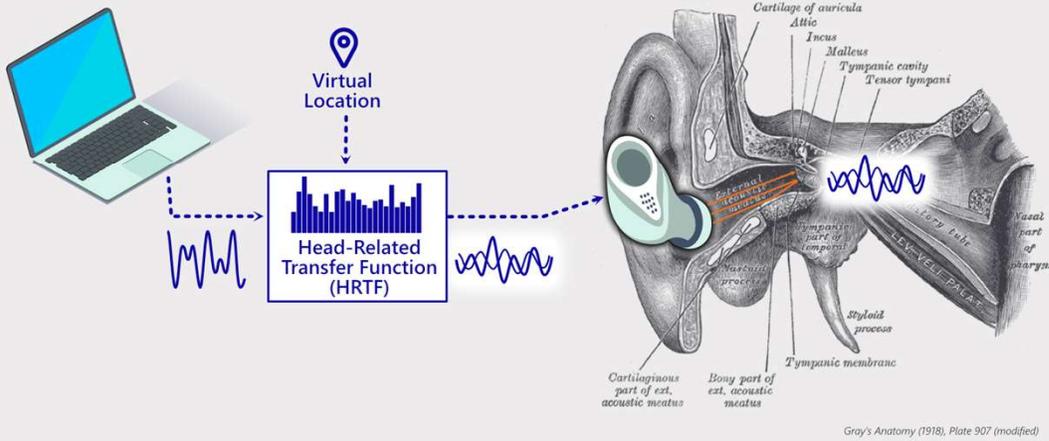


Gray's Anatomy (1918), Plate 907 (modified)



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Spatial Audio Systems



Gray's Anatomy (1918), Plate 907 (modified)

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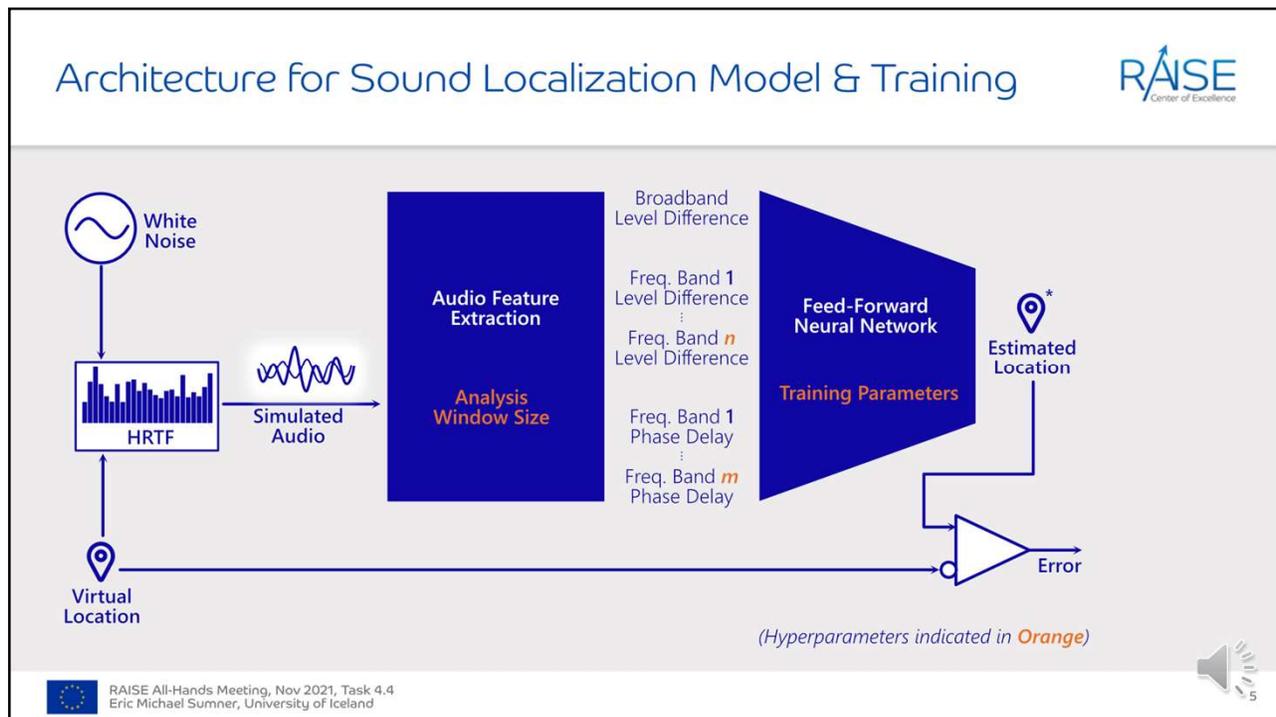
Measuring the HRTF of a 3d Model



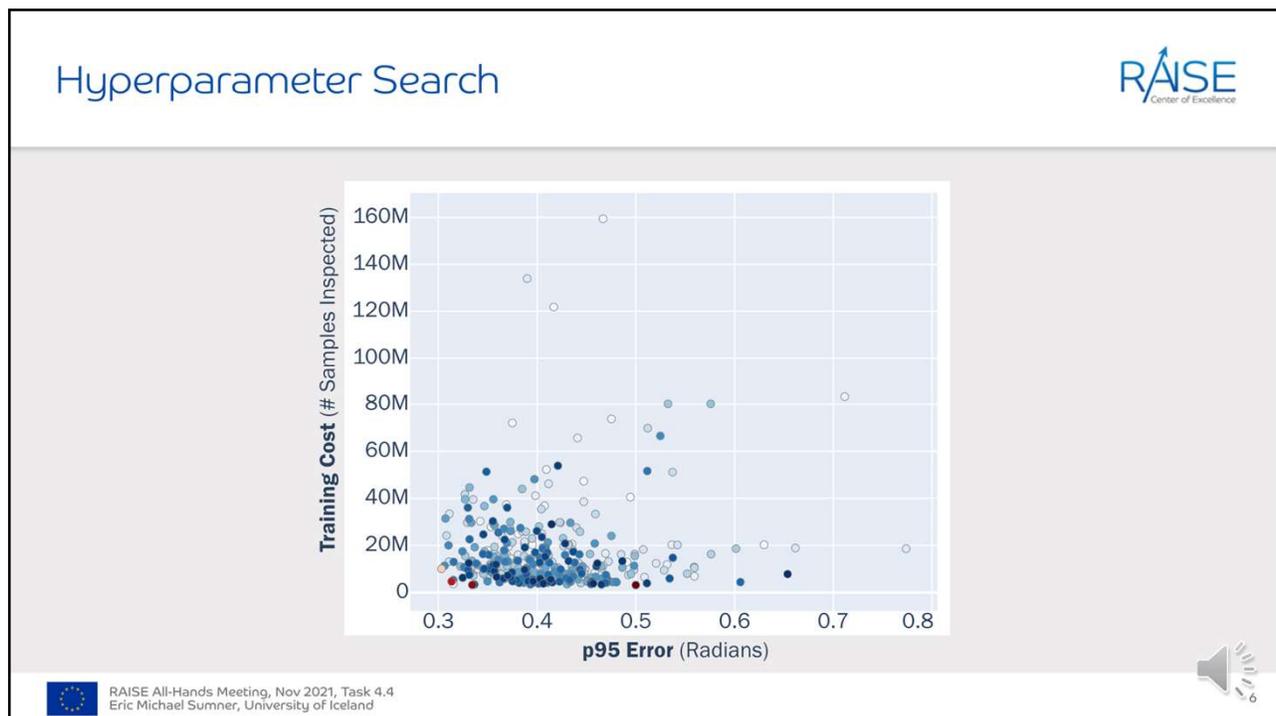
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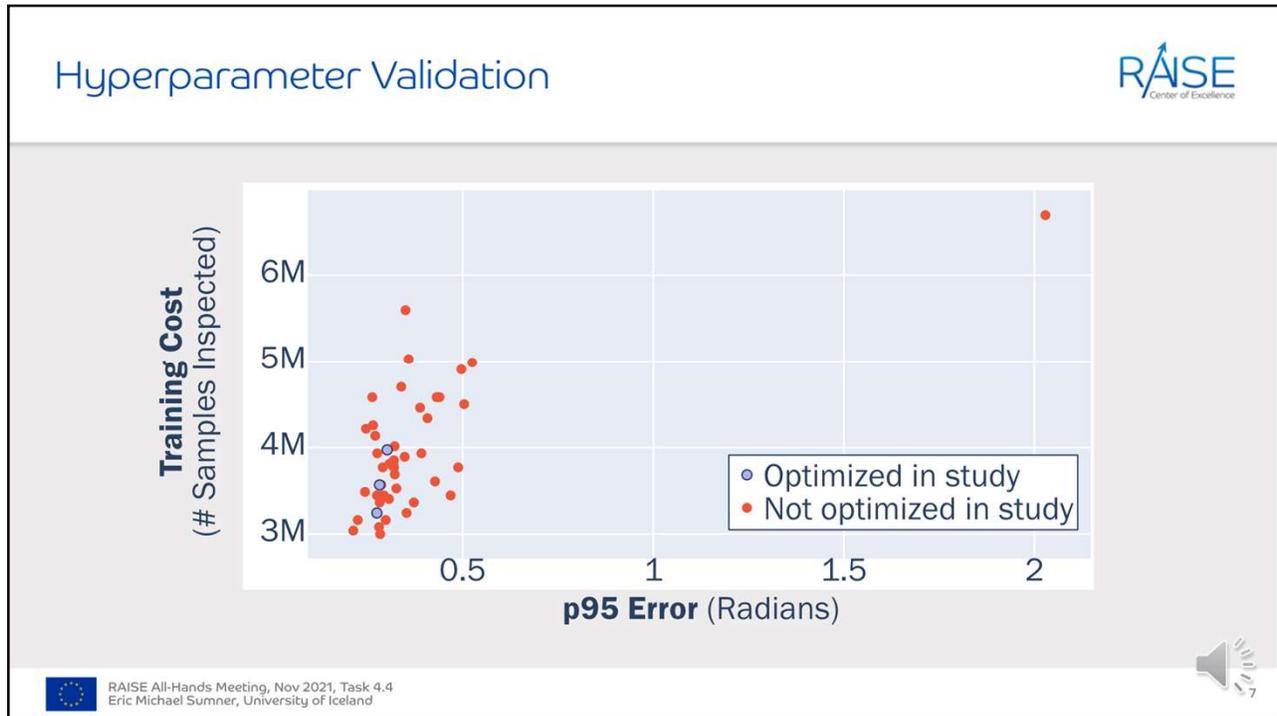
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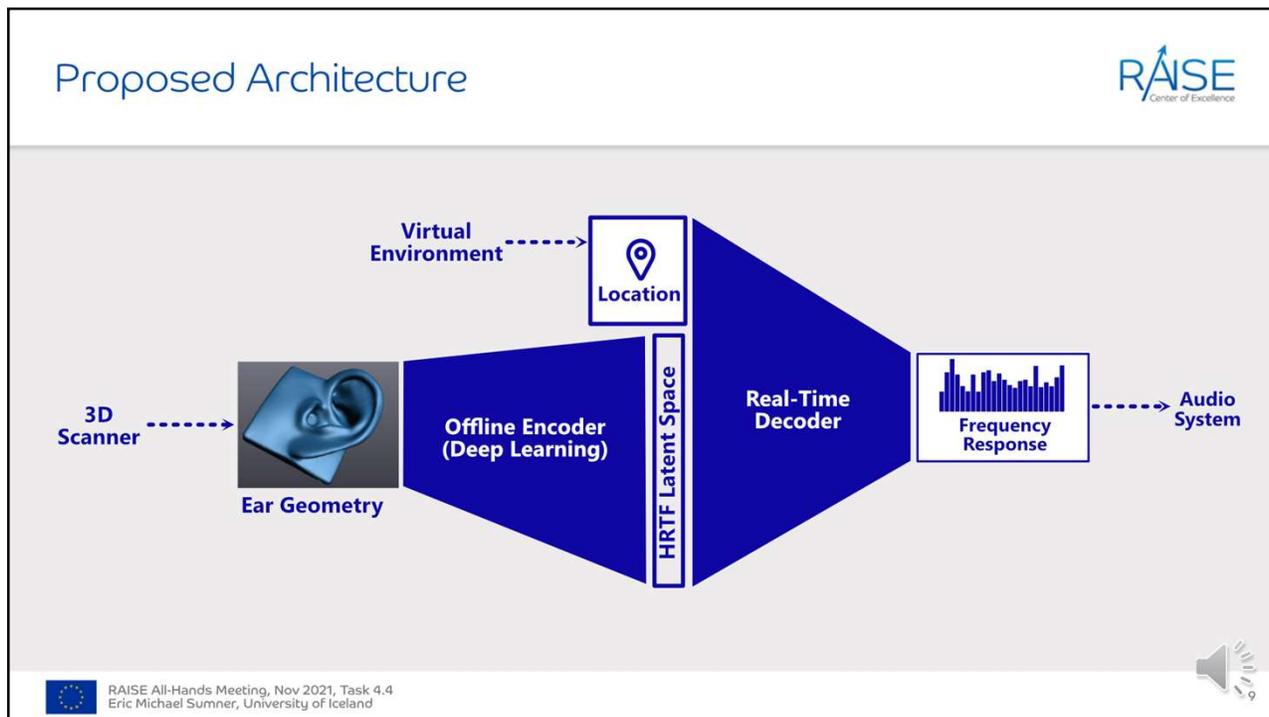
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CPU / GPU Comparison

	CPU	GPU
Linear Algebra & Signal Processing	NumPy	CuPy
Audio Feature Extraction	librosa	nnAudio
Machine Learning	learn <small>machine learning in Python</small>	PyTorch
Hyperparameter Search	OPTUNA	
Compute Resources	6x 2.6 GHz Intel Core i7	30x nVidia V100 DEEP-EST Extreme-Scale Booster
Search Time	3.5 Days	3.5 Hours

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drive. enable. innovate.

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