

# Humans vs. AI: Can we tell the difference musically?

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The background of the slide is a light blue color. It is filled with numerous open books, which are tilted at various angles. The books appear to be floating in the air. The spines of the books are visible, showing various titles and designs. Some books have dark blue or black covers, while others have lighter shades of blue or grey. The overall effect is a sense of knowledge and learning.

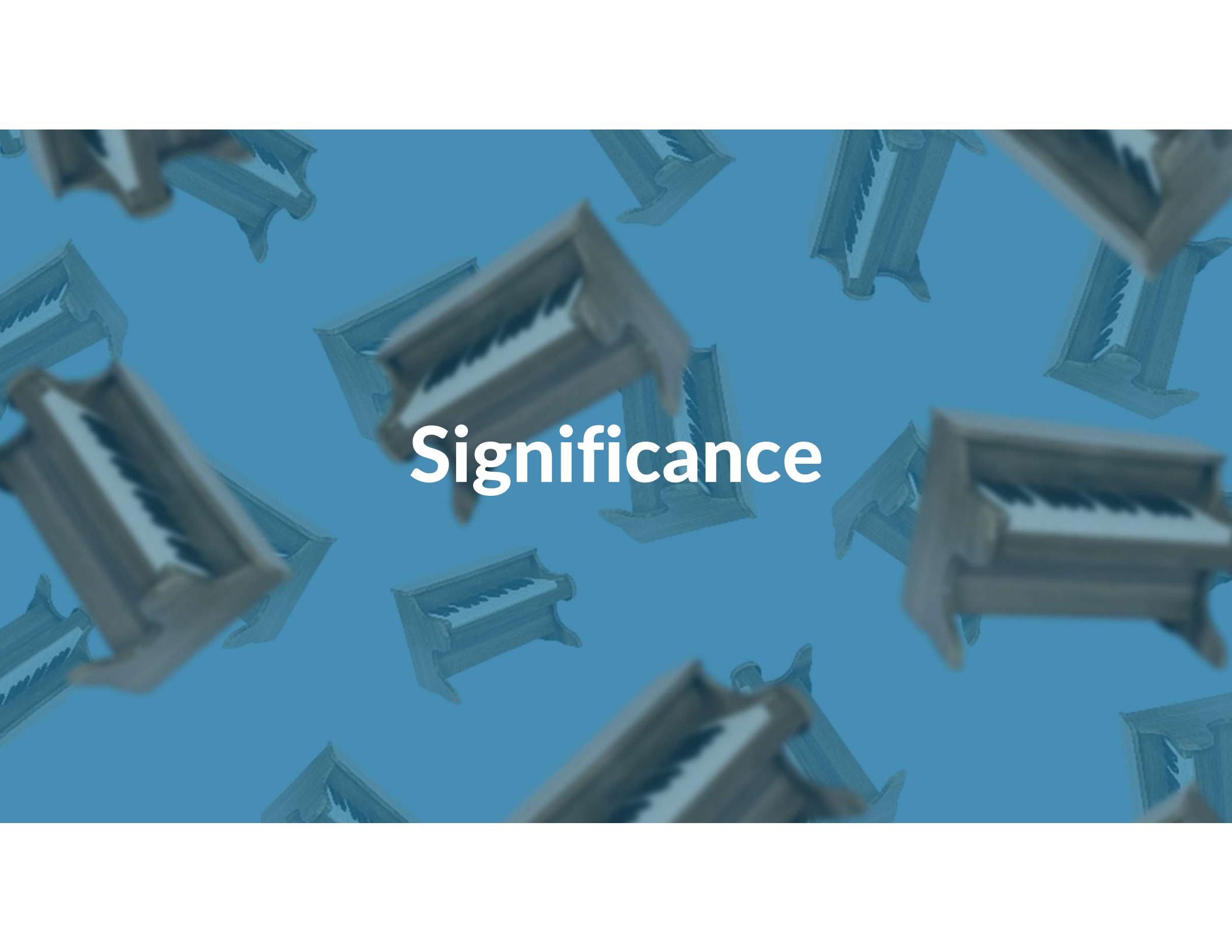
# Research Questions

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Can people tell the difference between AI music and manmade music?

Does increased knowledge of music theory facilitate the identification of AI music?

Does AI music evoke weaker emotional responses in people compared to original compositions?



# Significance

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AI products are becoming indistinguishable from human products

AI trained off human artists



# Prior Research

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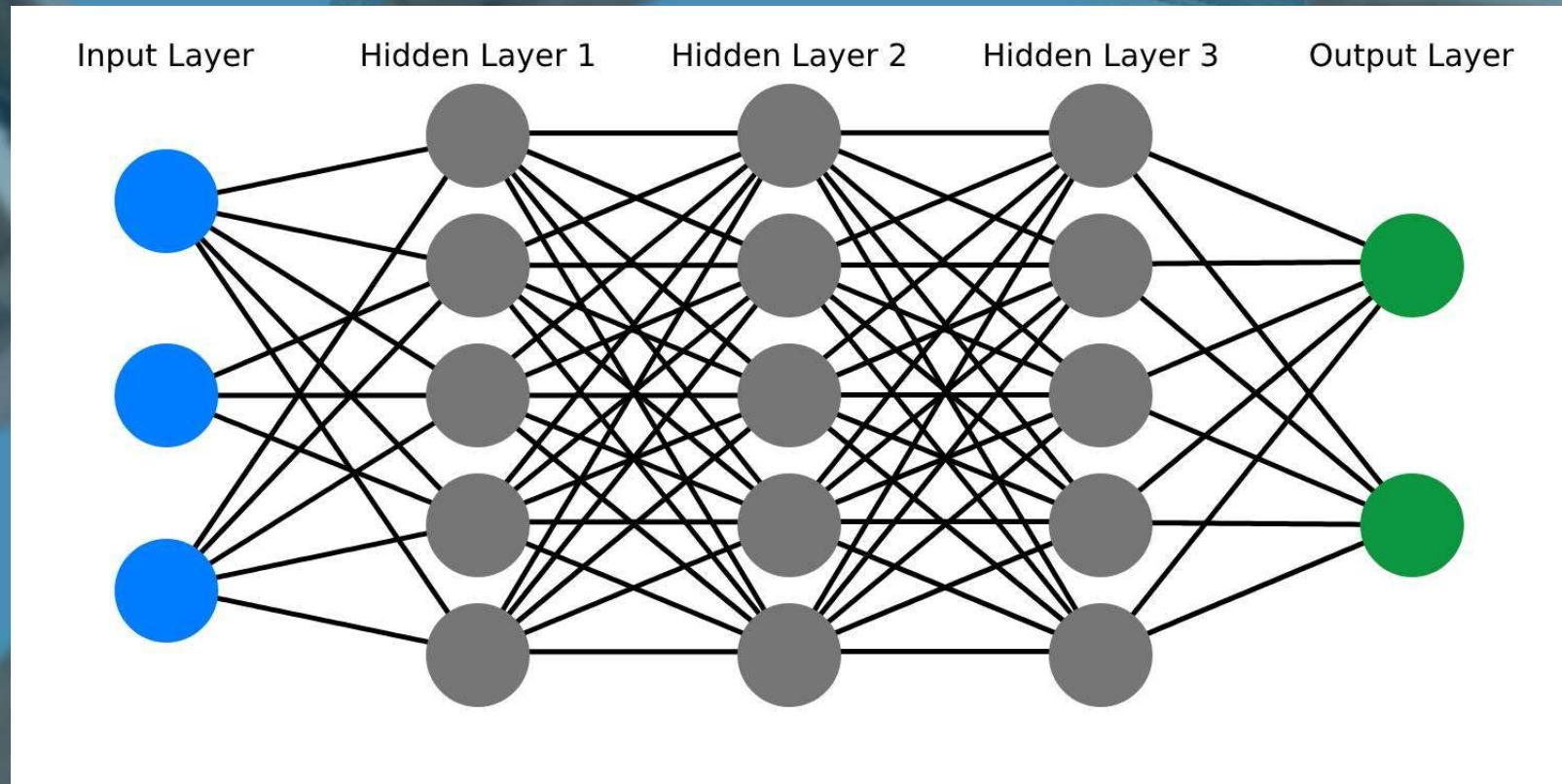
Lots of variance between musical genres and eras

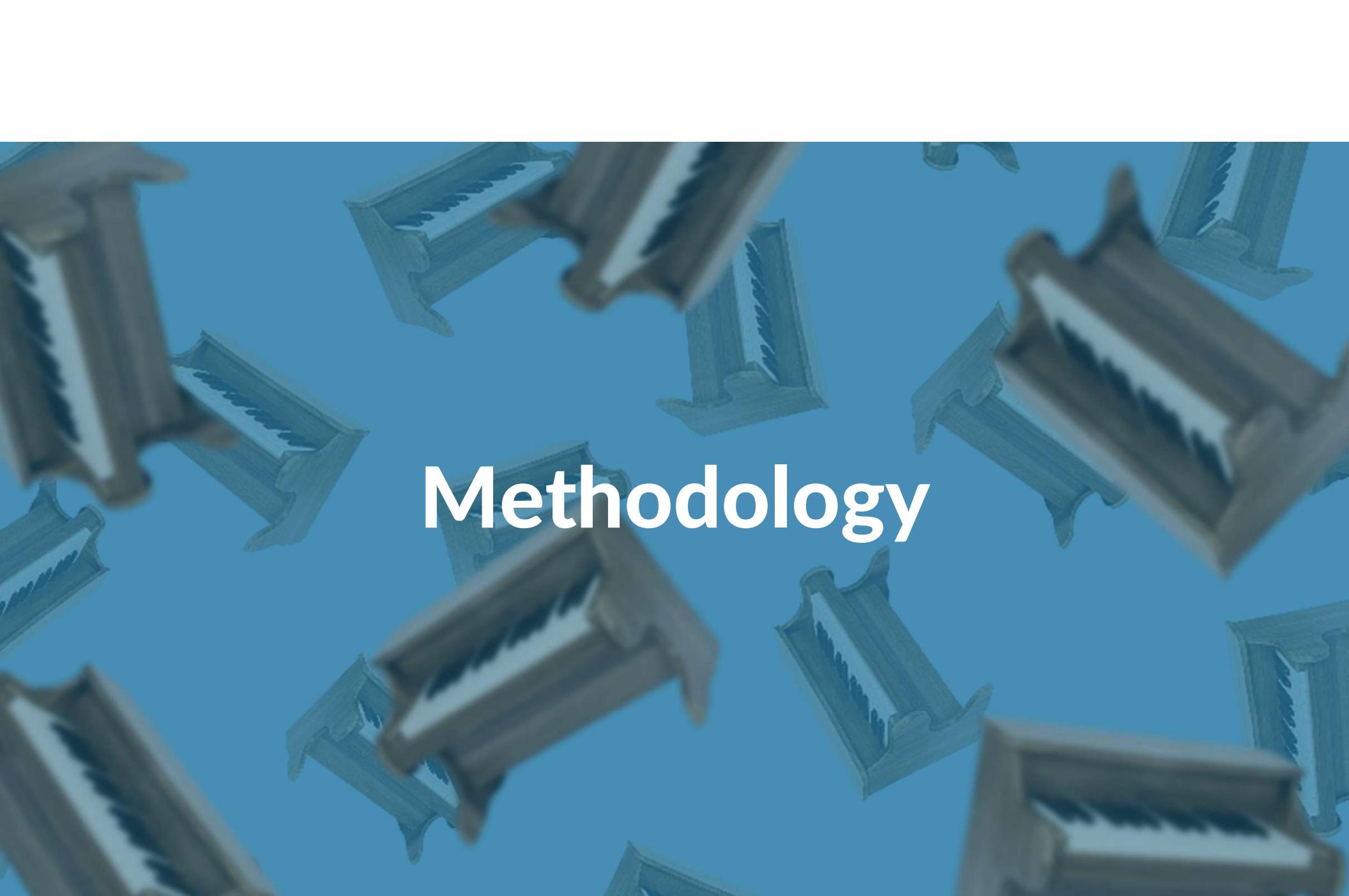
Trouble conveying emotions in its music

# Prior Research



# Prior Research





# Methodology

# Methodology

10 pieces: Baroque, Classical, Romantic, Contemporary (piano),  
Contemporary (cello), Jazz, World, Pop, Ambient, Personal Composition

AI music generated with Allegro Music Transformer (AMT)

# Methodology

Original Seed Composition



# Methodology

Original Seed Composition



OG



AI

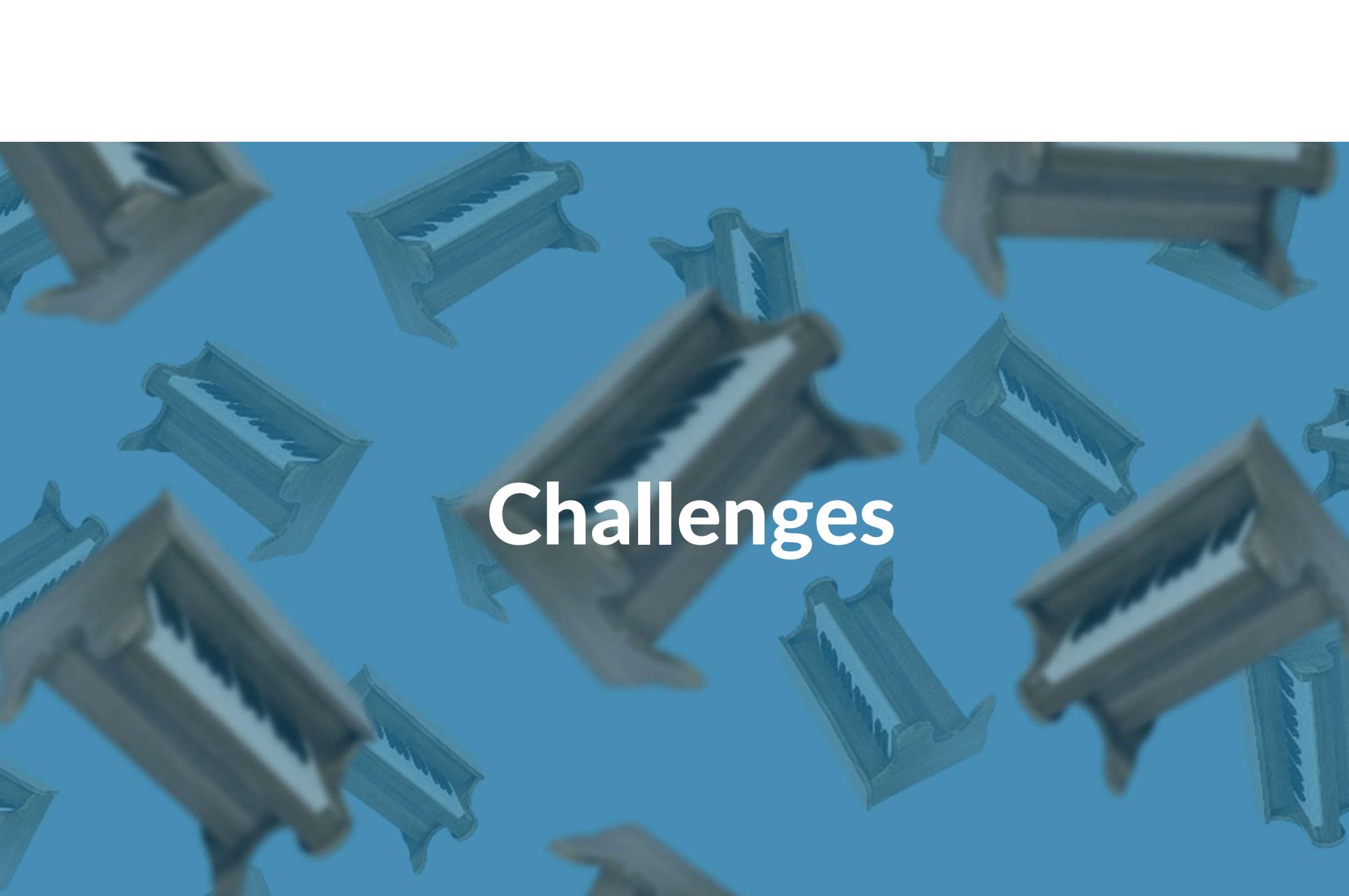


ME



# Methodology





# Challenges

# Challenges

**Had to switch out MuseNet with AMT**

**Google Colab has usage limits**

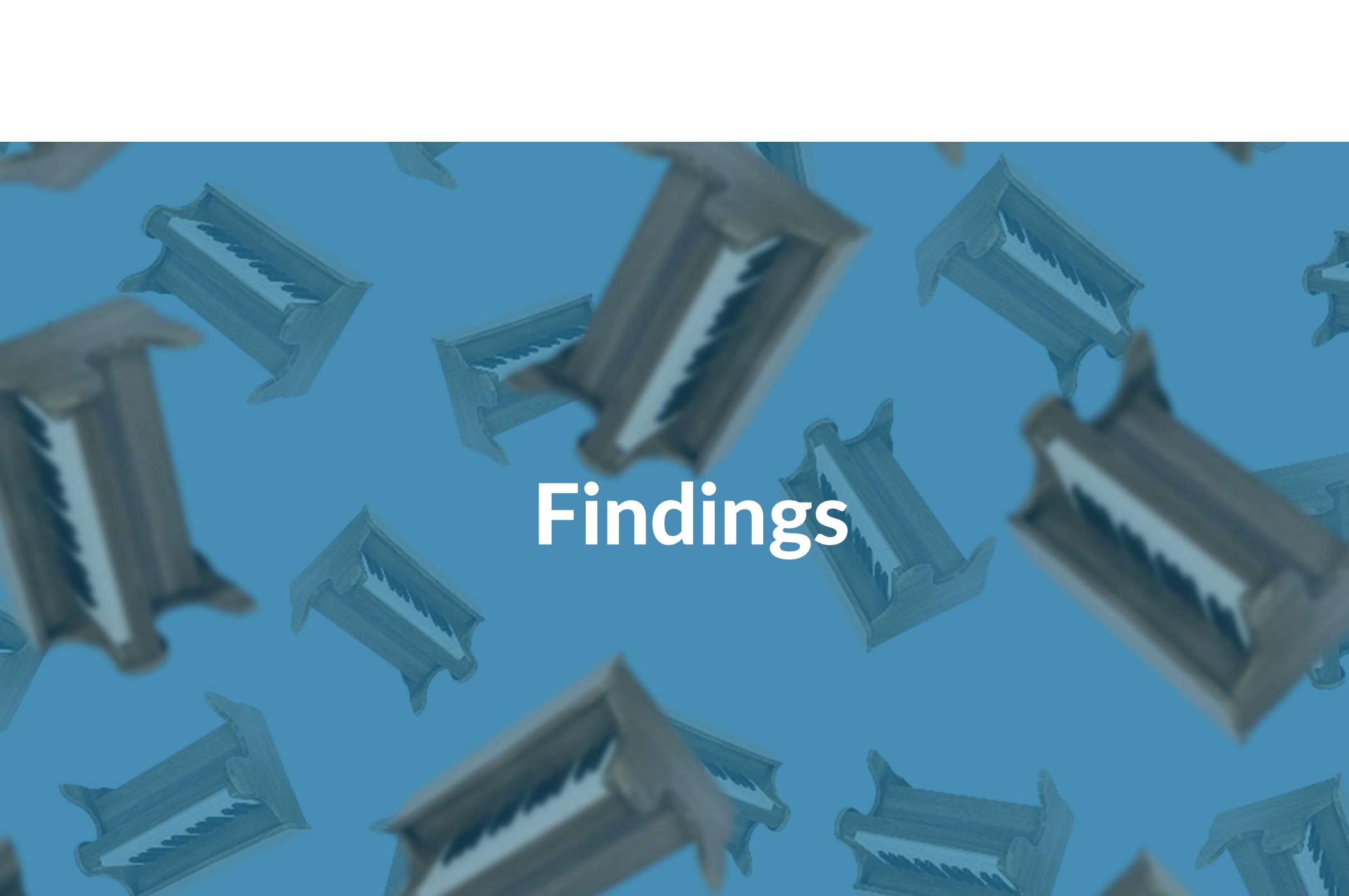
**Had to code survey in HTML**

**Survey went out a week late**

**Unchecked survey biases**

**Form went offline**

**Processing data in Excel**



# Findings

# Findings

62 responses

Average score: 3.323

Worse score: 0

Best score: 7

SD: 1.352

1<sup>st</sup> Quartile: 2

Median: 3

3<sup>rd</sup> Quartile: 4

# Findings

	Baroque	Classical	Romantic	Cont. (P)	Cont. (C)	Jazz	World	Pop	Ambient	PC
OG	27.42%	30.65%	27.42%	30.65%	24.19%	30.65%	30.65%	41.94%	35.48%	40.32%
AI	32.26%	38.71%	20.97%	33.87%	41.94%	45.16%	33.87%	24.19%	37.10%	24.19%
ME	40.32%	30.65%	51.61%	35.48%	33.87%	24.19%	35.48%	33.87%	27.42%	35.48%
	Baroque	Classical	Romantic	Cont. (P)	Cont. (C)	Jazz	World	Pop	Ambient	PC
OG	35.00%	40.00%	30.00%	30.00%	35.00%	15.00%	40.00%	55.00%	35.00%	40.00%
AI	25.00%	35.00%	30.00%	35.00%	25.00%	65.00%	30.00%	20.00%	35.00%	30.00%
ME	40.00%	25.00%	40.00%	35.00%	40.00%	20.00%	30.00%	25.00%	30.00%	30.00%
	Baroque	Classical	Romantic	Cont. (P)	Cont. (C)	Jazz	World	Pop	Ambient	PC
OG	50.00%	33.33%	41.67%	25.00%	33.33%	8.33%	33.33%	66.67%	33.33%	50.00%
AI	25.00%	33.33%	33.33%	33.33%	33.33%	83.33%	25.00%	8.33%	41.67%	16.67%
ME	25.00%	33.33%	25.00%	41.67%	33.33%	8.33%	41.67%	25.00%	25.00%	33.33%

# Findings

	Baroque	Classical	Romantic	Cont. (P)	Cont. (C)	Jazz	World	Pop	Ambient	PC
<b>Seed</b>	2.145	3.000	3.435	2.516	2.113	3.532	2.871	3.306	1.887	2.565
<b>OG</b>	2.355	2.774	3.581	2.774	1.952	3.371	2.903	3.145	1.903	2.597
<b>AI</b>	1.855	2.839	3.355	2.484	1.774	3.403	2.839	3.258	2.129	2.516
<b>ME</b>	2.258	2.710	3.194	2.210	2.032	3.532	2.694	3.290	2.903	2.452
	Baroque	Classical	Romantic	Cont. (P)	Cont. (C)	Jazz	World	Pop	Ambient	PC
<b>Seed</b>	2.70	3.45	3.70	2.85	2.30	3.85	3.35	3.40	2.20	2.85
<b>OG</b>	2.95	3.15	3.80	3.30	2.20	3.80	3.25	3.20	2.30	3.00
<b>AI</b>	2.45	3.30	3.55	2.75	1.90	3.60	3.30	3.30	2.35	2.95
<b>ME</b>	2.75	3.15	3.45	2.45	1.95	3.80	3.15	3.30	2.25	2.05
	Baroque	Classical	Romantic	Cont. (P)	Cont. (C)	Jazz	World	Pop	Ambient	PC
<b>Seed</b>	2.67	3.58	3.92	3.17	2.25	4.25	3.33	3.50	1.92	2.75
<b>OG</b>	3	3.17	3.83	3.50	1.83	4.08	3.25	3.08	2.08	2.92
<b>AI</b>	2.33	3.33	3.75	3	1.67	3.83	3.42	3.25	2.33	2.92
<b>ME</b>	2.75	3.00	3.58	2.58	1.83	4.08	3.17	3.00	2.08	2.75

# Findings

	Baroque	Classical	Romantic	Cont. (P)	Cont. (C)	Jazz	World	Pop	Ambient	PC
Seed	2.032	1.274	1.258	1.742	2.097	1.210	1.565	1.306	2.323	2.032
OG	1.968	1.403	1.371	1.597	2.435	1.242	1.484	1.274	2.452	2.000
AI	2.387	1.355	1.290	1.677	2.597	1.210	1.613	1.226	2.145	2.048
ME	1.839	1.419	1.452	1.790	2.048	1.129	1.597	1.290	2.355	2.065
	Baroque	Classical	Romantic	Cont. (P)	Cont. (C)	Jazz	World	Pop	Ambient	PC
Seed	2.10	1.55	1.35	2.15	2.45	1.30	1.50	1.40	2.35	2.05
OG	2.15	1.55	1.55	1.80	2.90	1.40	1.45	1.40	2.35	2.10
AI	2.35	1.55	1.50	2.15	3.05	1.30	1.55	1.45	2.20	2.20
ME	2.15	1.60	1.65	2.05	2.45	1.25	1.60	1.55	2.25	2.15
	Baroque	Classical	Romantic	Cont. (P)	Cont. (C)	Jazz	World	Pop	Ambient	PC
Seed	2.08	1.50	1.25	2.08	2.75	1.08	1.33	1.33	2.42	2.17
OG	2.25	1.58	1.58	1.75	3.33	1.25	1.33	1.42	2.33	2.25
AI	2.42	1.58	1.50	2.17	3.42	1.17	1.42	1.50	2.08	2.42
ME	2.17	1.58	1.67	2.00	2.83	1.08	1.50	1.58	2.25	2.33



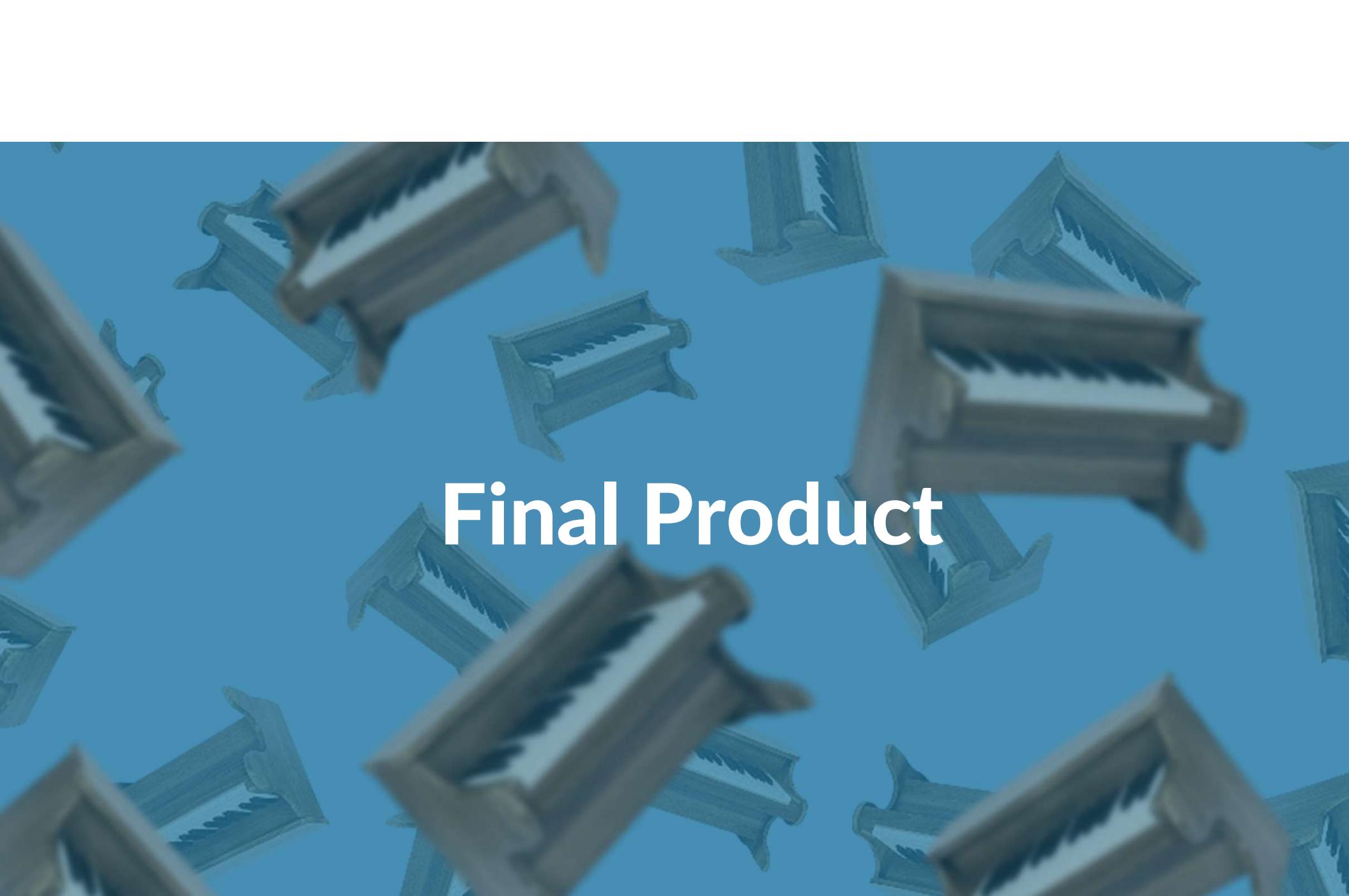
# Next Steps

# Next Steps

Look into AI composing without seed compositions

AI in longer form compositions

Other questions: should we even be using AI for creative endeavors?



# Final Product

# Acknowledgements

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Dr. Winslow and Dr. Martin

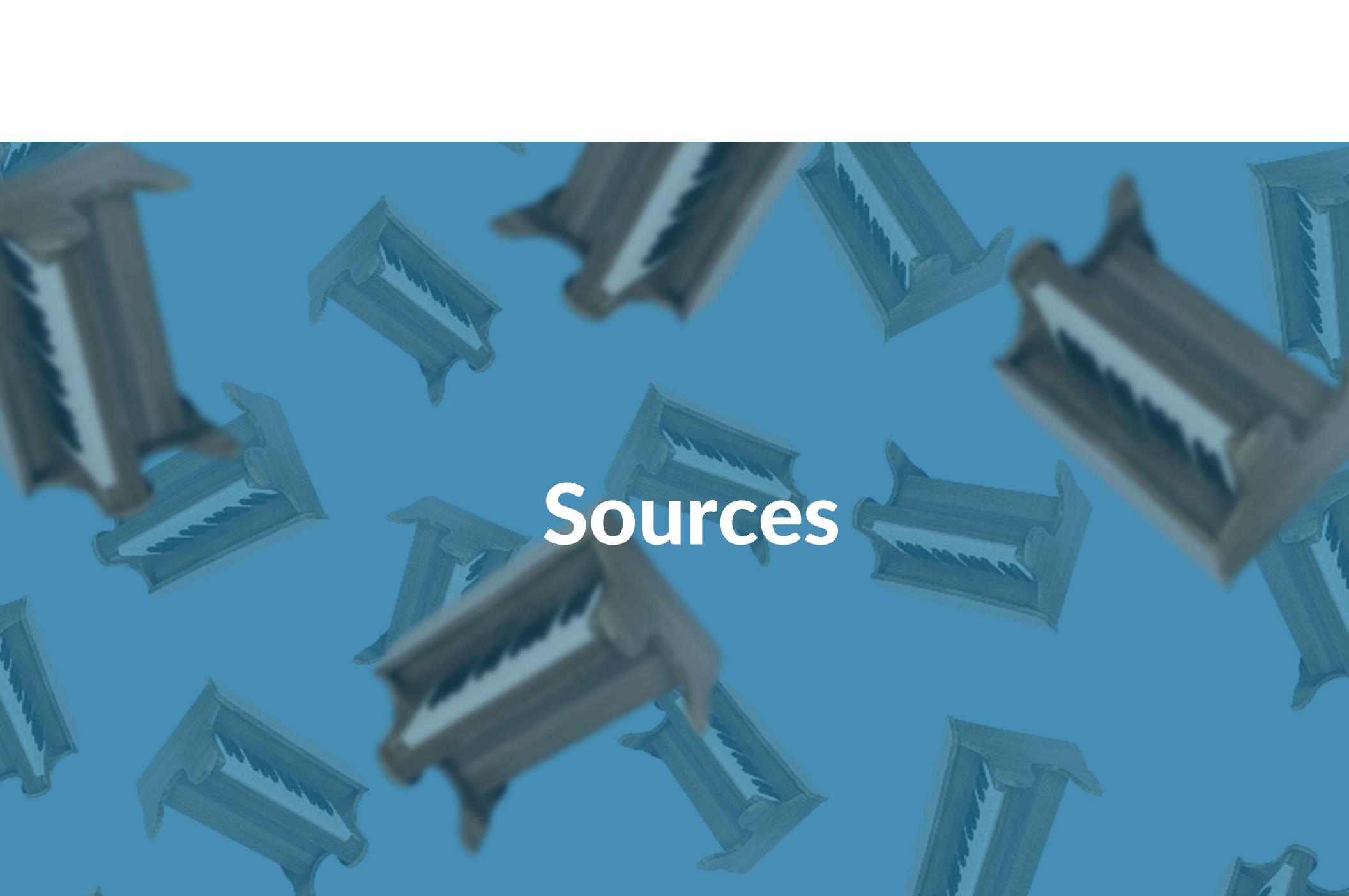
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Questions?