Mathifier is a system that recognizes speech restricted to the math domain. That is, you speak natural math equations, and Mathifier will recognize your speech, convert it to Latex, and compile the Latex code into an equation format in real-time.

**Abstract**

1 Introduction

Mathifier uses CMU Sphinx 4, an open-source speech recognition tool designed for research. The modular design of Sphinx allowed us to modify only certain parts of the system.

**Introduction**

We trained the system by tailoring a transcript consisting of math equations and having different speakers in different settings utter the sentences in the transcript.

Mathifier has a grammar different from the English language. The system had to know that instead of having a subject followed by a verb, a number was followed by an operator.

During speech recognition, the recognized sentence is converted to Latex on-the-fly.

The Latex code is compiled so that an image in equation form can be displayed.

We trained the system by tailoring a transcript consisting of math equations and having different speakers in different settings utter the sentences in the transcript.

**Sphinx 4 Architecture**

**Credits**

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\int_{1}^{2}x^2+y^2
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\int \int_1^2 x^2+ y^2
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\int \int_1^2 x^2+ y^2
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