

## CASE STUDY

# Improving scientific literature search algorithm



How Consensus annotated 10 times faster, and improved model quality with data annotations from Centaur Labs



## Overview

Consensus is making science accessible and consumable for all by building a search engine that queries academic literature, and shares scientifically substantiated search results.

## Challenge

- Unscalable annotation system - Recruited, trained and managed 12 PhDs via UpWork to annotate; Produced 2-3 reads per case; Evaluated quality via random spot checks; high management overhead, low throughput
- Needed to annotate 5,000 search results and 7,500 query-search result pairs classified

## Solution

- Classified 5K search results first for meaningfulness outside of context of paper, then for simplicity, classified 7,500 query-search result pairs on scale of 1-3 regarding how well result answered the query
- Centaur Labs generated 17,500 annotations, at a rate of 1,900 - 6,600 annotations per week, with 10 qualified opinions per annotation
- 86% - 93% agreement with Gold Standard cases; Leveraged labeler agreement insights to inform model development

## Impact

- ✓ Improved model's score on a quality test **from .73 to .87** with data annotations provided by Centaur Labs
- ✓ **Saved 10 weeks of annotation time** - annotated in 2 weeks what would have taken team 3 months

*"Working with Centaur Labs to annotate data is better in every way than our prior system. The annotations are more accurate, more affordable and the system is easier for our team to manage"*



**Eric Olson**

Founder/CEO at Consensus