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# New OCR Model — Chandra by Datalab — I tested Ramanujan's handwritten letter from 1913.

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Last week, I came across something wild. An open-source OCR model developed by Datalab, called **Chandra**. It barely made any noise on social media, but it *quietly outperformed every major OCR system* in independent benchmarks — even dots-ocr.

And the crazy part? It's entirely open-source.

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## Why I Even Bothered Testing It

I've used various OCR tools — from Tesseract to GPT-4's vision API — and they all have their limitations. They often make mistakes with handwritten text or ruin the layout when parsing PDFs with tables and formulas.

So when I saw that Chandra claims to handle *handwriting, tables, math, and even multi-column layouts* while maintaining the original structure, I had to try it.

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## I Fed It Raw

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through Chandra.

Most OCR tools... give up.

But Chandra managed to read it clearly. It preserved the layout, math notation, and even the faint ink details. It didn't feel like OCR — it felt like document reconstruction.

The image shows a comparison between a photograph of handwritten mathematical notes and a digital interface for processing them. On the left, the handwritten notes are shown in a blue-tinted background. The notes discuss the Hardy-Littlewood-Sandalye theorem and include several equations involving complex numbers and trigonometric functions. A yellow box highlights a specific equation:  $a_n = e^{\left(\frac{1}{2}n\pi i + \frac{1}{4}\right)} \frac{\Gamma(\frac{1}{2}n+1)}{\Gamma(n+1)} + O(n^{-\frac{1}{2}})$ . On the right, the digital interface shows the processed text and equations. The first section is labeled 'TEXT' with the formula  $(1) a_n = e^{\left(\frac{1}{2}n\pi i + \frac{1}{4}\right)} \frac{\Gamma(\frac{1}{2}n+1)}{\Gamma(n+1)} + O(n^{-\frac{1}{2}})$ . Below it, another section is labeled 'TEXT' with the text 'where  $c = \frac{21}{9} \frac{\Gamma(\frac{1}{2})}{\pi^{1/2}} = .94373\dots$ '. The third section is labeled 'EQUATION' with the formula  $(2) \left[ \frac{2\pi n(1-c)}{(\log n)^{1/2} \sqrt{(1-\frac{1}{2}(1-\frac{1}{4k+1})(1-\frac{1}{4k}))}} \dots \right]$ . A yellow arrow points to the term  $\sqrt{(1-\frac{1}{2}(1-\frac{1}{4k+1})(1-\frac{1}{4k}))}$ . The interface also includes tabs for 'Blocks', 'JSON', 'HTML', 'Markdown', and 'Render HTML'.

## What Makes Chandra Different

Here's what you get right out of the box:

- Works with 40+ languages
- Understands handwriting, tables, and math
- Reconstructs forms and checkboxes
- Outputs Markdown, HTML, or JSON

- Extracts **images and captions**

- Can run in the browser:  
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It's one of those tools that *gets* how messy real documents can be.

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## How I Got It Running

You can install it straight from pip:

```
pip install chandra-ocr
```

Then point it at any PDF or image:

```
chandra input.pdf ./output
```

If you want to run it locally (no vLLM), add:

```
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```

```
chandra input.pdf ./output --method hf
```

It spits out:

- a Markdown version
- an HTML version
- metadata as JSON
- and a folder of extracted images

That's it — no weird setup, no login.

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## Prefer a UI? There's a Streamlit App

If command-line tools make your head spin, just run:

```
chandra_app
```

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## Running It in Production

For heavy workloads or batch processing, you can spin up a vLLM server:

```
chandra_vllm
```

You can tweak things like GPU IDs or token limits with environment variables:

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```
VLLM_API_BASE=http://localhost:8000/v1
VLLM_MODEL_NAME=chandra
VLLM_GPUS=0
```

That's how Datalab optimised it for high-throughput OCR tasks.

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## The Numbers Don't Lie

I'm not the only one impressed. In the *olmocr* benchmark, **Chandra v0.1.0** scored **83.1 overall**, surpassing every other model tested — including dots-ocr (79.1), olmOCR (78.5), and even GPT-4o (69.9).

Model	Overall	Source
Chandra v0.1.0	$83.1 \pm 0.9$	Datalab
dots.ocr	$79.1 \pm 1.0$	dots.ocr repo
olmOCR v0.3.0	$78.5 \pm 1.1$	olmocr repo
GPT-4o (Anchored)	$69.9 \pm 1.1$	olmocr repo

It also excels in math and table recognition — two areas where most models struggle.

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## For Tinkerers and Researchers

If you prefer not to install anything, there's a **free online playground** where you can upload files and test them instantly.

The model is licensed under Apache 2.0, while the weights are licensed under OpenRAIL-M, which is suitable for research, personal projects, and small startups. A commercial license is required if you intend to use it in a competing product.

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## Final Thoughts

Honestly, I believe most people missed this release.

OCR hasn't felt exciting for years, but **Chandra** makes it so. It's accurate, fast, and genuinely respects the structure of your documents.

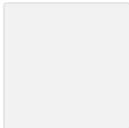
If you work with research papers, scanned forms, or anything involving math, give it a try.

You can find it here – [github.com/datalab-to/chandra](https://github.com/datalab-to/chandra)

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