



Claude in Excel

Python Angles : Applications & Limitations

 Claude

7th Feb 2026

Heavy lift & formatting by Claude in Excel and PowerPoint.

01

What You Can Do

Top Use Cases for Python in Claude for Excel

What You Can Do

Feature	Description
Excel Heavy Lifting	Formatting, tables, pivots, summarizations, formulas. Just describe what you want in plain English.
Upload & Analyze Data	CSV files up to 30MB. Loads into pandas. Grouping, filtering, merging, analysis. It can convert to Parquet also, but at these sizes, the speed impact is minimal
Statistical Tests	t-tests, ANOVA, chi-square, distribution fitting, hypothesis testing. scipy + statsmodels available.
Time Series Forecasts	ARIMA, exponential smoothing. Good for smaller, cleaner datasets where you need a quick forecast.
ML Models	scikit-learn, xgboost available. Works for smaller datasets. For full ML pipelines, Jupyter/Colab is still first choice.
Read & Parse PDFs	Extract text, tables, metadata using Python libraries (PyMuPDF, pdfplumber). Upload PDF, get structured data.

What You Can Do (contd.)

Feature	Description
Read Images (Vision)	Claude reads images natively using its vision model. OCR, text extraction from screenshots, reading charts. No Python library needed.
Data Visualization	matplotlib, seaborn, bokeh, altair. Charts rendered in Excel as image . <i>[Quick Technical: Chart Image → base64 text → Office.js addImage() inserts it into the workbook]</i>
Web Search	Claude can search the web for context. Not via API from sandbox — it's Claude's own web search capability.
Excel Formula Help	Ask it to write formulas, debug existing ones, explain what a formula does. You can have it do a analysis table with all the formulas instead of just pasting final values.

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Current Limitations

Beta Preview — February 2026

Current Limitations (Beta Preview — Feb 2026)

Limitation	Details
No API Calls	Sandbox is isolated. Cannot call external APIs, your endpoints, or any remote service.
No File Download	Files created inside Python sandbox (Excel, PDF, HTML) cannot be downloaded. Results come back as text/numbers only.
30MB Upload Limit	Larger files won't upload. No Parquet file upload currently (even though pyarrow is installed).
No Automation	Every interaction is one-off. No scheduled runs, no button-click automation. Use xlwings Lite for repeatable workflows, file processing & API calls.
Non-Deterministic	Same prompt may give different results each time. Not suitable where exact reproducibility is needed.
Images Skip Sandbox	Uploaded images route to the vision model only — they don't land as files in the sandbox. All other file types (PDF, Excel, CSV, JSON, TXT, PPTX etc) arrive as real files.

Current Limitations (contd.)

Limitation	Details
No Local Drive Write Access	Files can be uploaded. But cannot write files on your machine directly.
Libraries Not Fully Usable	Pillow, Jinja2, interactive HTML charts are in sandbox but outputs can't be exported. <i>[Quick Technical Base64 export works with charts PNGs but not here due to some Office.js API issues]</i>
PDF via Python Only	Uses PyMuPDF/pdfplumber in sandbox, not Claude's native document parsing.
No Code Visibility	You don't see the Python code it runs unless you explicitly ask. You can ask - but it's not automatic.
Data Goes to Anthropic	Python runs on Anthropic's server-side sandbox. Your data leaves your machine.

03

Complete Python Library Reference

Not all libraries are usable — refer to the Limitations section

Math, Statistics & ML

Library	What It Does	Example Tasks
scipy	Optimization, integration, interpolation, signal processing	Run a t-test, Fit a distribution
statsmodels	Regression, time series (ARIMA), hypothesis testing	Linear regression, Forecast with ARIMA
scikit-learn	Classification, regression, clustering, dim. reduction	Cluster customers, Predict churn
xgboost	Gradient boosting for classification & regression	Build a high-accuracy prediction model
shap	Explain ML model predictions (feature importance)	Explain why the model predicted X

Math, Statistics & ML (contd.)

Library	What It Does	Example Tasks
<code>sympy</code>	Symbolic math — algebra, calculus, equation solving	Solve this equation, Integrate this
<code>numba</code>	JIT compiler — speed up numerical Python code	Speed up this heavy calculation
<code>networkx</code>	Graph/network analysis — paths, centrality, community	Analyze this network, Shortest path
<code>nltk</code>	NLP — tokenization, sentiment, stemming	Analyze sentiment, Tokenize this text

Visualization & Charting

Library	What It Does	Example Tasks
matplotlib	Standard 2D/3D plotting — bar, line, scatter, histogram	Create a chart of monthly revenue
seaborn	Statistical visualizations — heatmaps, pair plots, box plots	Show me a correlation heatmap
bokeh	Interactive browser-based charts	* Not usable
altair	Declarative statistical visualization (Vega-Lite)	* Not usable
holoviews / hvplot	High-level interactive plotting from dataframes	* Not usable
wordcloud	Generate word cloud images from text	Make a word cloud from survey responses
graphviz	Create flowcharts, org charts, decision trees	Draw an org chart, Visualize this workflow

Data & Spreadsheets

Library	What It Does	Example Tasks
pandas	Dataframes, filtering, grouping, pivoting, merging, time series	Analyze this CSV, Group sales by region
numpy	Fast numerical arrays, linear algebra, matrix math	Calculate correlation matrix, Run Monte Carlo sim
openpyxl	Read/write Excel .xlsx files with formatting	Pull data from uploaded Excel file
xlrd	Read legacy Excel .xls files	Read this old .xls file
XlsxWriter	Write Excel files with charts, formatting, formulas	* Not usable
pyarrow	Fast columnar data, Parquet & Arrow file support	* Limited usable
xarray	Multi-dimensional labeled arrays (climate, scientific)	Analyze this multi-dimensional dataset

Document Processing

Library	What It Does	Example Tasks
pdfplumber	Extract text, tables, and metadata from PDFs	Extract the table from page 5 of this PDF
pdfminer.six	Low-level PDF text extraction with layout analysis	Parse this complex PDF layout
PyMuPDF (fitz)	Fast PDF rendering, text & image extraction	* Limited usable
pypdf	Merge, split, rotate, encrypt/decrypt PDFs	* Not usable
tabula-py	Extract tables from PDFs into DataFrames	Pull all tables from this annual report

Document Processing (contd.)

Library	What It Does	Example Tasks
<code>python-docx</code>	Read/write Microsoft Word .docx files	Extract text from this Word doc
<code>python-pptx</code>	Read/write Microsoft PowerPoint .pptx files	Extract data from this PowerPoint
<code>markdown</code>	Convert documents (PDF, DOCX, PPTX) to Markdown	Convert this document to readable text
<code>beautifulsoup4</code>	Parse and extract data from HTML/XML files	* Limited usable

Image Processing & OCR

Library	What It Does	Example Tasks
Pillow (PIL)	Image open, resize, crop, rotate, filter, convert formats	* Limited usable
opencv-python	Computer vision — edge detection, contours, transforms	* Limited usable
pytesseract	OCR — extract text from images & scanned documents	* Limited usable
scikit-image	Image processing — segmentation, morphology, filters	* Limited usable
img2pdf / pdf2image	Convert images to PDF and PDF pages to images	* Limited usable

Geospatial & Mapping

Library	What It Does	Example Tasks
geopandas	Geospatial DataFrames — shapefiles, GeoJSON, spatial joins	Map this data, Spatial join to zip codes
shapely	Geometric operations — buffer, intersection, distance	Calculate distance between points
pyproj	Coordinate system transformations & projections	Convert lat/long to UTM coordinates
Fiona	Read/write geospatial vector data (Shapefile, GeoJSON)	Read this shapefile

AI & ML Inference

Library	What It Does	Example Tasks
onnxruntime	Run ONNX machine learning models (fast inference)	* Not usable
huggingface-hub	Load/use HuggingFace models & tokenize text (offline)	* Not usable
magika	Google's file type detection using deep learning	* Limited usable

Utilities & Other

Library	What It Does	Example Tasks
Faker	Generate realistic fake data — names, addresses, emails	Generate 1,000 rows of test data
Jinja2	Template engine for generating text/HTML/reports	* Not usable
PyYAML	Parse and write YAML configuration files	* Not usable
cryptograph y	Encryption, hashing, digital signatures	Hash these values, Generate secure tokens
validators	Validate emails, URLs, IPs, credit cards, etc.	Validate all email addresses in column B
regex	Advanced regular expressions (superset of re module)	Extract phone numbers from this text
sqlite3	Embedded SQL database — query data with SQL	* Limited usable