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RuntimeError: OPENAI\_API\_KEY environment variable not set  
(.venv) PS C:\Users\akash singh\Desktop\heartdisease\backend> & ".venv\Scripts\Activate.ps1"

(.venv) PS C:\Users\akash singh\Desktop\heartdisease\backend> uvicorn main:app --reload --host 0.0.0.0 --port 8000

INFO: Will watch for changes in these directories: ['C:\Users\akash singh\Desktop\heartdisease\backend']  
INFO: Uvicorn running on <http://0.0.0.0:8000> (Press CTRL+C to quit)  
INFO: Started reloader process [1000] using WatchFiles  
Process SpawnProcess-1:  
Traceback (most recent call last):  
File "C:\Program Files\WindowsApps\PythonSoftwareFoundation.Python.3.11\_3.11.2544.0\_x64\_\_qbz5n2kfra8p0\Lib\multiprocessing\[process.py](http://process.py)", line 314, in \_bootstrap  
self.run()  
File "C:\Program Files\WindowsApps\PythonSoftwareFoundation.Python.3.11\_3.11.2544.0\_x64\_\_qbz5n2kfra8p0\Lib\multiprocessing\[process.py](http://process.py)", line 108, in run  
self.\_target(\*self.\_args, \*\*self.\_kwargs)  
File "C:\Users\akash singh\Desktop\heart\_disease\_model\backend.venv\Lib\site-packages\uvicorn\_subprocess.py", line 80, in subprocess\_started  
target(sockets=sockets)  
File "C:\Users\akash singh\Desktop\heart\_disease\_model\backend.venv\Lib\site-packages\uvicorn\[server.py](http://server.py)", line 67, in run  
return asyncio.run(self.serve(sockets=sockets))  
^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^  
File "C:\Program Files\WindowsApps\PythonSoftwareFoundation.Python.3.11\_3.11.2544.0\_x64\_\_qbz5n2kfra8p0\Lib\asyncio\[runners.py](http://runners.py)", line 190, in run  
return runner.run(main)  
^^^^^^^^^^^^^^^^  
File "C:\Program Files\WindowsApps\PythonSoftwareFoundation.Python.3.11\_3.11.2544.0\_x64\_\_qbz5n2kfra8p0\Lib\asyncio\[runners.py](http://runners.py)", line 118, in run  
return self.\_loop.run\_until\_complete(task)  
^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^  
File "C:\Program Files\WindowsApps\PythonSoftwareFoundation.Python.3.11\_3.11.2544.0\_x64\_\_qbz5n2kfra8p0\Lib\asyncio\base\_events.py", line 654, in run\_until\_complete  
return future.result()  
^^^^^^^^^^^^^^^  
File "C:\Users\akash singh\Desktop\heart\_disease\_model\backend.venv\Lib\site-packages\uvicorn\[server.py](http://server.py)", line 71, in serve  
await self.  
*serve(sockets)File "C:\Users\akash singh\Desktop\heart\_disease\_model\backend.venv\Lib\site-packages\uvicorn\*[*server.py*](http://server.py)*", line 78, in*   
  
*serveconfig.load()File "C:\Users\akash singh\Desktop\heart\_disease\_model\backend.venv\Lib\site-packages\uvicorn\*[*config.py*](http://config.py)  
  
  
*", line 436, in loadself.loaded\_app = import\_from\_string(self.app)^^^^^^^^^^^^^^^^^^^^^^^^^^^^File "C:\Users\akash singh\Desktop\heart\_disease\_model\backend.venv\Lib\site-packages\uvicorn\*[*importer.py*](http://importer.py)  
  
  
*", line 19, in import\_from\_stringmodule = importlib.import\_module(module\_str)^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^File "C:\Program Files\WindowsApps\PythonSoftwareFoundation.Python.3.11\_3.11.2544.0\_x64\_\_qbz5n2kfra8p0\Lib\importlib\_\_init*.py", line 126, in import\_module  
return \_bootstrap.\_gcd\_import(name[level:], package, level)  
^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^  
File "<frozen importlib.\_bootstrap>", line 1204, in \_gcd\_import  
File "<frozen importlib.\_bootstrap>", line 1176, in \_find\_and\_load  
File "<frozen importlib.\_bootstrap>", line 1147, in \_find\_and\_load\_unlocked  
File "<frozen importlib.\_bootstrap>", line 690, in \_load\_unlocked  
File "<frozen importlib.\_bootstrap\_external>", line 940, in exec\_module  
File "<frozen importlib.\_bootstrap>", line 241, in \_call\_with\_frames\_removed  
File "C:\Users\akash singh\Desktop\heartdisease\backend\[main.py](http://main.py)", line 33, in <module>  
raise RuntimeError("OPENAI\_API\_KEY environment variable not set")  
RuntimeError: OPENAI\_API\_KEY environment variable not set again i am facing the same problems give me step by step guide

The backend keeps failing because the OPENAI\_API\_KEY isn’t available to the uvicorn worker that actually runs the app, especially when --reload spawns a new process on Windows; fix it by setting the key in the right scope or loading from a .env file that uvicorn reads at start.[[1]](#fn1)[[2]](#fn2)[[3]](#fn3)

**Quick fix now**

* In the same PowerShell where uvicorn is launched, set the key for this session:
  + Run: $env:OPENAI\_API\_KEY="sk-...actual\_key..." and then start uvicorn again in the same window.[[4]](#fn4)[[5]](#fn5)
* If still seeing the error, start uvicorn with an env file:
  + Create backend.env containing: OPENAI\_API\_KEY=sk-...actual\_key....[[6]](#fn6)[[7]](#fn7)
  + Install python-dotenv in the venv: pip install python-dotenv.[[2]](#fn2)[[6]](#fn6)
  + Launch: python -m uvicorn main:app --reload --env-file .env.[[1]](#fn1)

**Step-by-step guide (PowerShell + FastAPI on Windows)**

**1) Activate venv and verify Python path**

* From backend folder: ..venv\Scripts\Activate.ps1 and confirm (Get-Command python).Source points to .venv Scripts\python.exe so packages and env loading happen in this venv.[[8]](#fn8)

**2) Choose one method to expose OPENAI\_API\_KEY**

* Method A: Session-scoped (fastest for dev)
  + In the same PowerShell session that will run uvicorn:
    - $env:OPENAI\_API\_KEY="sk-...actual\_key...".[[4]](#fn4)
  + Verify: [System.Environment]::GetEnvironmentVariable("OPENAI\_API\_KEY","Process") should print the key.[[5]](#fn5)
  + Keep this window open; start uvicorn from this same session so the spawned reloader inherits it.[[3]](#fn3)[[5]](#fn5)
* Method B: Persistent user-level variable (survives new terminals)
  + Run: setx OPENAI\_API\_KEY "sk-...actual\_key..." then close and reopen PowerShell before running uvicorn.[[9]](#fn9)[[5]](#fn5)
  + Note: setx does not affect the current process; reopening the terminal is required.[[5]](#fn5)[[9]](#fn9)
* Method C: .env file loaded by uvicorn
  + Create backend.env with a single line: OPENAI\_API\_KEY=sk-...actual\_key....[[7]](#fn7)[[6]](#fn6)
  + Install python-dotenv: pip install python-dotenv.[[2]](#fn2)[[6]](#fn6)
  + Start: python -m uvicorn main:app --reload --env-file .env so uvicorn loads the variables before importing [main.py](http://main.py).[[3]](#fn3)[[1]](#fn1)
* Method D: Load .env inside code (works even without uvicorn flag)
  + At the very top of [main.py](http://main.py), before any os.environ[...] reads:
    - from dotenv import load\_dotenv
    - load\_dotenv() # or load\_dotenv(".env").[[7]](#fn7)[[2]](#fn2)
  + Ensure python-dotenv is installed in the venv: pip install python-dotenv.[[6]](#fn6)

Recommendation for reliability during development on Windows: use Method C (uvicorn --env-file .env) or Method D (load\_dotenv at top of [main.py](http://main.py)). These ensure variables are present before the import of main and across reloader subprocesses.[[1]](#fn1)[[2]](#fn2)

**3) Start the server correctly**

* With session var set or .env in place:
  + python -m uvicorn main:app --reload --host 0.0.0.0 --port 8000 [--env-file .env if using Method C].[[3]](#fn3)[[1]](#fn1)
* If using --reload and file changes aren’t detected on Windows or WSL, set WATCHFILES\_FORCE\_POLLING=true to improve reload behavior: $env:WATCHFILES\_FORCE\_POLLING="true".[[10]](#fn10)[[11]](#fn11)

**4) Verify from within the app (optional)**

* Temporarily add a debug line after loading envs in [main.py](http://main.py):
  + import os; print("HAS\_KEY", bool(os.getenv("OPENAI\_API\_KEY")))
* It should print True in the uvicorn logs; remove after confirming.[[2]](#fn2)[[7]](#fn7)

**5) Avoid the sklearn warning (optional but recommended)**

* The warning means the model pickle was created with scikit-learn 1.6.1, but runtime is 1.7.1; either re-save on 1.7.1 or match versions for safe inference:
  + pip install scikit-learn==1.6.1 to match the pickle, or re-train/re-dump with 1.7.1 and use that artifact.[[12]](#fn12)[[13]](#fn13)

**Why the error persisted**

* setx creates a persistent variable for future shells only; the current PowerShell session and uvicorn’s reloader subprocess won’t see it unless the terminal is reopened or the variable is also set in-process via $env:... before launching uvicorn.[[9]](#fn9)[[5]](#fn5)
* On Windows, uvicorn --reload spawns a subprocess; if the variable isn’t present at the parent process start or loaded via .env before import, [main.py](http://main.py) raises at import time.[[1]](#fn1)[[3]](#fn3)

**Minimal working commands (copy-paste)**

* Using .env and uvicorn flag:
  + echo OPENAI\_API\_KEY=sk-... > .env
  + ..venv\Scripts\Activate.ps1
  + pip install python-dotenv
  + python -m uvicorn main:app --reload --env-file .env.[[6]](#fn6)[[3]](#fn3)[[1]](#fn1)
* Using session variable:
  + ..venv\Scripts\Activate.ps1
  + $env:OPENAI\_API\_KEY="sk-...actual\_key..."
  + python -m uvicorn main:app --reload --host 0.0.0.0 --port 8000.[[4]](#fn4)[[3]](#fn3)

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1. <https://stackoverflow.com/questions/73727750/how-to-pass-env-file-to-fastapi-app-via-command-line>

1. <https://fastapi.tiangolo.com/advanced/settings/>

1. <https://www.uvicorn.org>

1. <https://java2blog.com/set-environment-variable-powershell/>

1. <https://blog.netwrix.com/powershell-environment-variables>

1. <https://pypi.org/project/python-dotenv/>

1. <https://www.getorchestra.io/guides/fastapi-and-environment-variables-a-detailed-tutorial>

1. <https://fastapi.tiangolo.com/virtual-environments/>

1. <https://stackoverflow.com/questions/5898131/set-a-persistent-environment-variable-from-cmd-exe>

1. <https://github.com/encode/uvicorn/discussions/1586>

1. <https://www.uvicorn.org/settings/>

1. <https://scikit-learn.org/stable/modules/generated/sklearn.exceptions.InconsistentVersionWarning.html>

1. <https://stackoverflow.com/questions/71076322/trying-to-unpickle-estimator-linearregression-from-version-x-when-using-version/72493664>

1. <https://github.com/encode/uvicorn/issues/1319>

1. <https://github.com/fastapi/fastapi/discussions/6307>

1. <https://www.reddit.com/r/PowerShell/comments/sjmdwu/set_a_persistent_environment_variable_on_a/>

1. <https://stackoverflow.com/questions/73966627/uvicorn-reload-using-watchfiles-is-not-working-for-fastapi-in-docker-container>

1. <https://www.uvicorn.org/deployment/>

1. <https://github.com/encode/uvicorn/discussions/2341>

1. <https://www.linkedin.com/pulse/dotenv-files-app-security-fastapi-prince-odoi>

1. <https://learn.microsoft.com/en-us/powershell/module/microsoft.powershell.core/about/about_environment_variables?view=powershell-7.5>

1. <https://configu.com/blog/setting-environment-variables-in-powershell-a-practical-guide/>