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BowerBot: A Tool- Based AI Agent for Production OpenUSD

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How it started

Collect assets from many places

- Started with asset intake
- Pull from local and connected sources
- Normalize folders for production



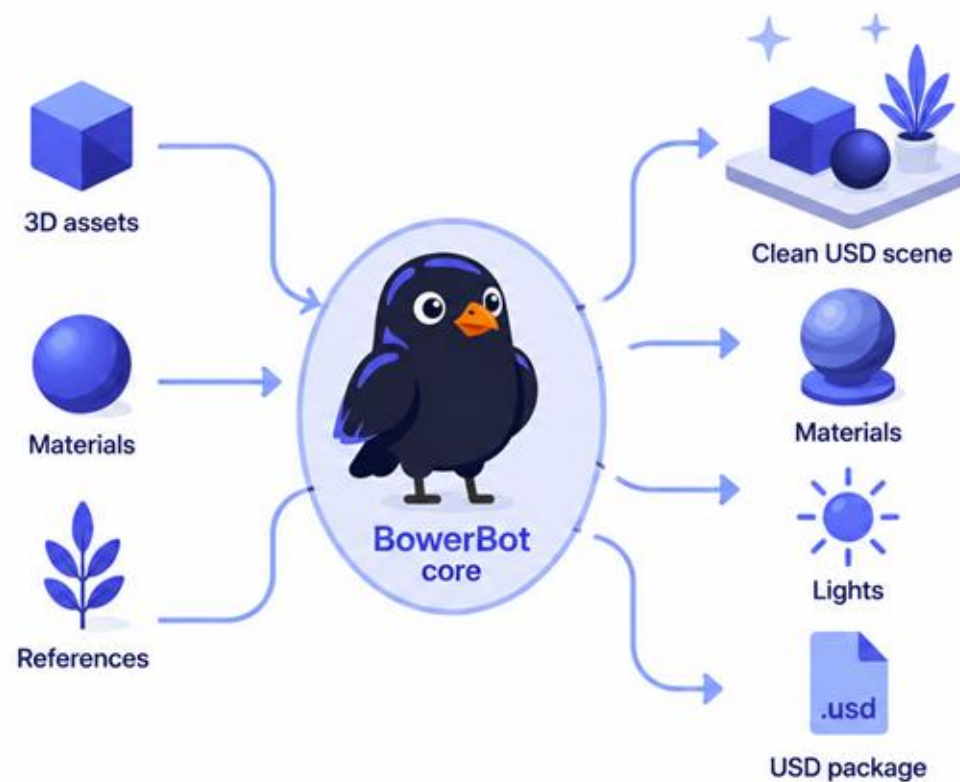
Like a bowerbird, **BowerBot** collects and arranges.

Then the core grew

Expert at authoring clean USD

- Place assets with spatial awareness
- Author materials, lights, and packaging
- Keep USD structure clean and readable

The core became focused on reliable USD authoring.



Skills plug into the core

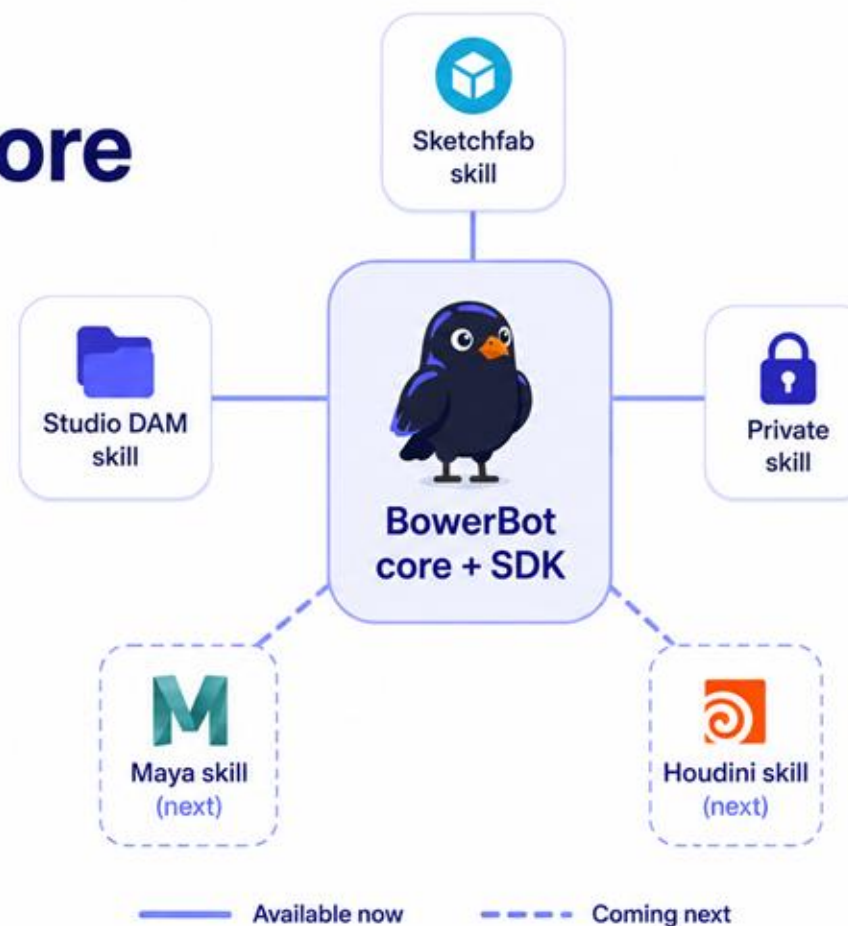
Built with the BowerBot SDK

- ✓ Each skill is its own Python package
- ✓ Discovered through bowerbot.skills
- ✓ Install from PyPI, Git, or local path
- ✓ Public, private, or in-house

```
$ pip install bowerbot-skill-sketchfab
```

```
$ pip install git+ssh://git@github.com/acme/bowerbot-skill-acme.git
```

```
$ pip install -e /path/to/skill
```



Core and skills architecture

FastAPI-style, simple and strict

- Tools are thin adapters, like endpoints in FastAPI
- Services orchestrate the work
- Utils stay small and reusable
- pxr lives only in utils

One tool = one service = one prompt

Same pattern every time: schema, service, tool.

1) Project



2) Asset



3) Material



Why tools, not code

More reliable, less waiting

Code on the fly

- ✗ More tokens
- ✗ Longer waits
- ✗ Can drift from rules
- ✗ Harder to trust

Fixed tools

- ✓ Smaller tool calls
- ✓ Same steps every time
- ✓ Rules built in
- ✓ Faster feedback



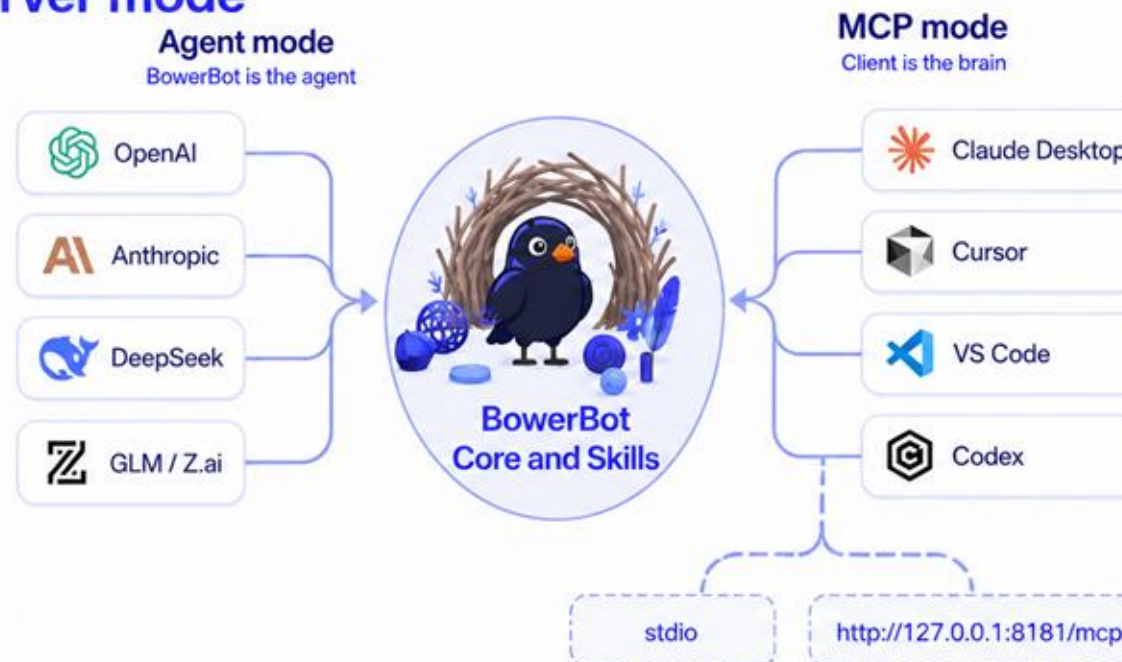
Less code generation. More direct action.

Run BowerBot your way

Agent mode or MCP server mode

- ✓ Agent mode uses its own LLM
- ✓ Works with API models through LiteLLM
- ✓ Examples: OpenAI, Anthropic, DeepSeek, GLM / Z.ai
- ✓ MCP mode exposes BowerBot tools to clients
- ✓ MCP transports: stdio or local HTTP

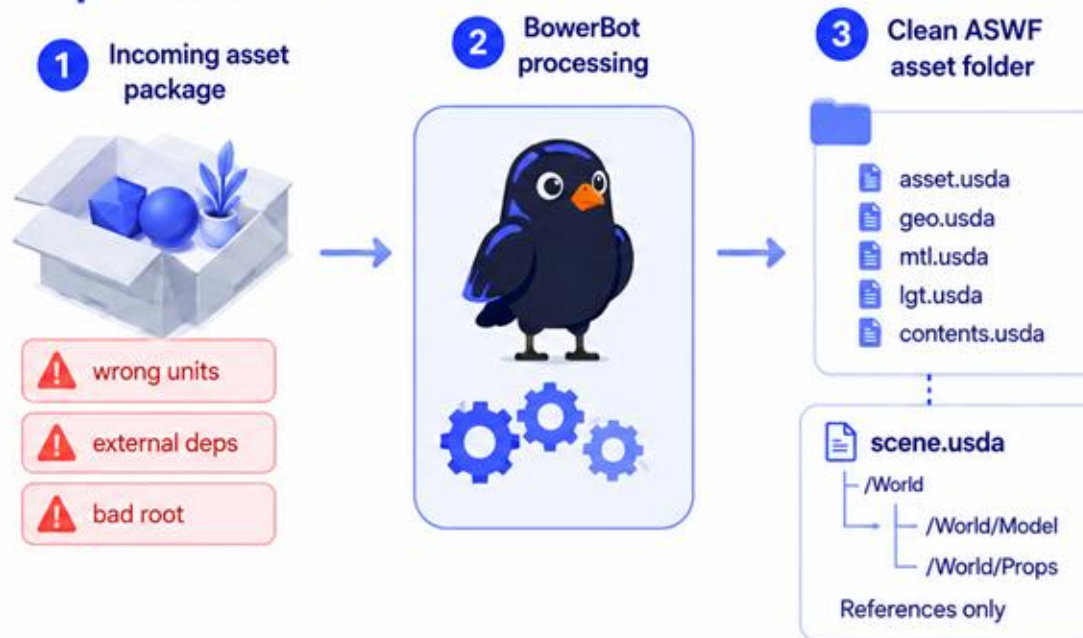
Same tools, different ways to drive them.



Pipeline quality built in

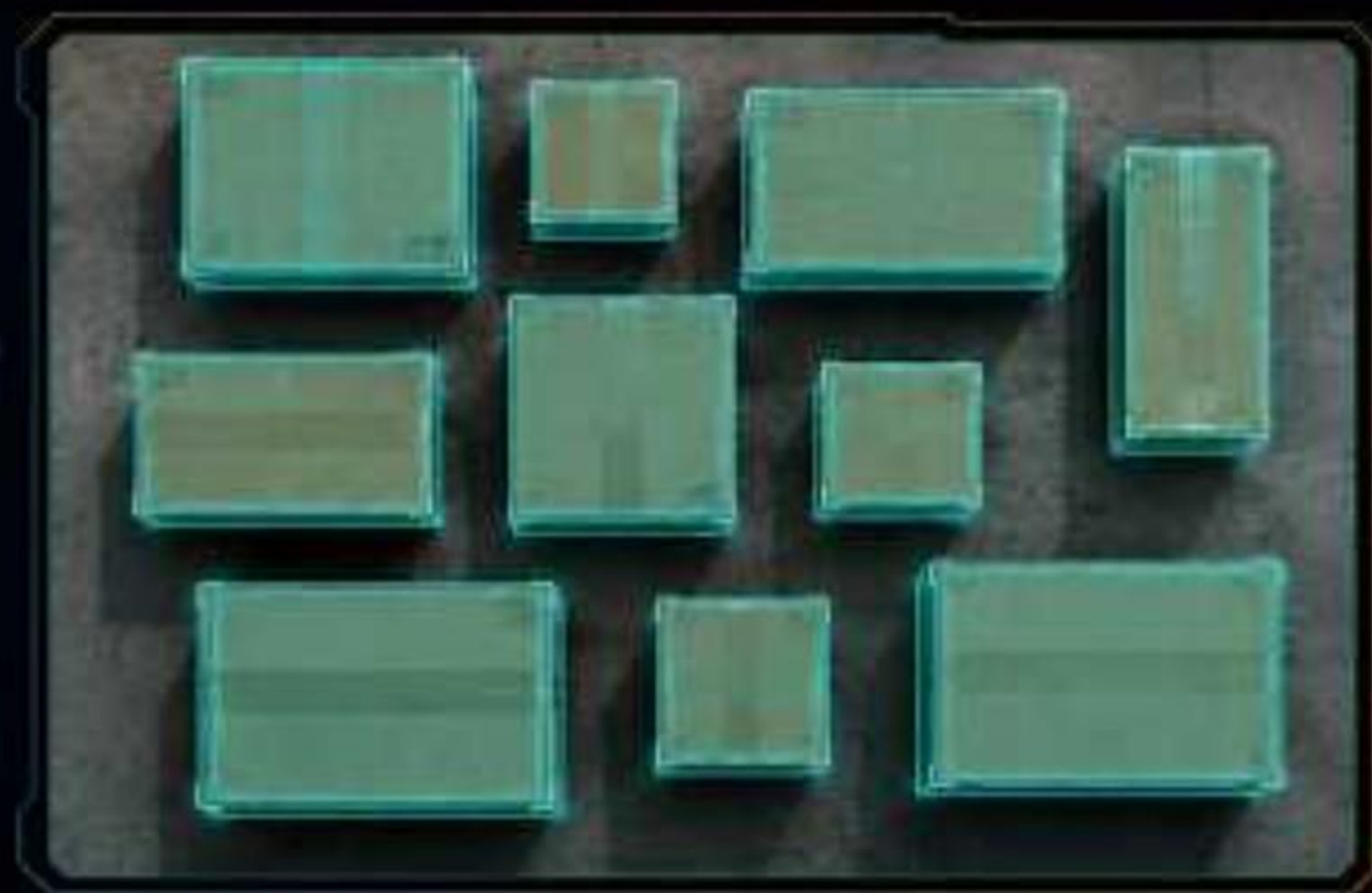
Catch problems before they hit production

- ASWF-compliant asset folders
- Self-contained intake
- scene.usda keeps references only
- Validation catches issues early



Catch pipeline bugs before they reach production.

BowerBot : Synthetic Data



Thank you

BowerBot • Contact and links



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