



Building PoWBoT

How AI Unlocks Grassroots Innovation

(or how I accidentally came to be a full-stack developer)

Glenn Jooste | Bitcoin Ubuntu

Bitcoin Circular Economies Summit | January 29, 2026

The Challenge

The Existing System

Late 2025

- Manual verification and data capture
- Manual sourcing of payment details
- Manual tracking and auditing
- Manual project registration
- 3-month cycles

It worked... but couldn't scale.

The Exploration

Just trying to make life easier

Looking for ways to consolidate existing data and make admin tasks more manageable.

- Working with Grok
- Learning Python basics
- Google Sheets basics

Then the pivotal idea...



"Help me write a basic Telegram bot"

November 30, 2025

That changed everything.

The Problems We Faced

Verification

- Manual checking
- Time-consuming
- Human error
- Bottlenecks

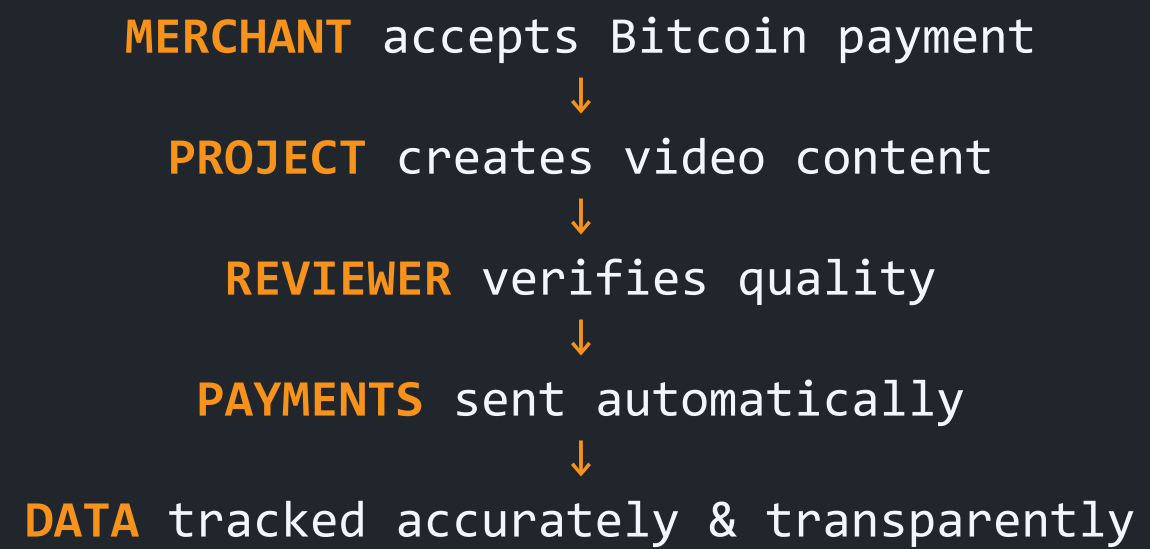
Payments

- Address limitations
- Wrong information
- Coordination delays
- Frustrated users

Rewards

- 3-month wait
- Unknown amounts
- Demotivating
- Can't scale

The Idea



Fast. Accurate. Fair.

The Partnership

Me

- Domain knowledge
- Problem understanding
- Creative thinking
- User perspective

+

Claude

- Technical expertise
- Code generation
- Debugging
- Best practices



Day 1 – The First Attempt

November 30, 2025

The Build

- Python script
- Checked X post format
- Used xAI API (Grok)
- Basic validation

The Outcome

- **Cost:** Testing budget on API calls
- **Result:** Too many false positives

But it proved the concept.

Day 2 – The Breakthrough

December 1, 2025

The Build

- Switched approach completely
- Removed AI validation
- Direct content retrieval
- Pattern matching and format checks

The Outcome

- **Cost:** \$0
- **Result:** Dramatically improved speed and accuracy

"The best version costs nothing and runs much faster"



60 Days of Evolution

November 30 → January 27

Core Systems

- ✓ Payment integration
- ✓ Reviewer workflow
- ✓ Nostr integration
- ✓ Public dashboard
- ✓ Stats generation
- ✓ SQLite backup

8

Major Features

8,000+

Lines of Code

0

Prior Experience

Enhancements

- ✓ Telegram dashboard
- ✓ Improved messaging
- ✓ Difficulty adjustment
- ✓ Public tracker
- ✓ Error logging
- ✓ Demo mode

The System Today

Bot

- Python
- python-telegram-bot

Storage

- Google Sheets
- SQLite backup

Stats

- Public dashboard
- Real-time updates

Social

- Telegram
- Nostr SDK
- Auto-reposts and likes

Payments

- Blink API
- Lightning Network
- Receipts for users

Hosting

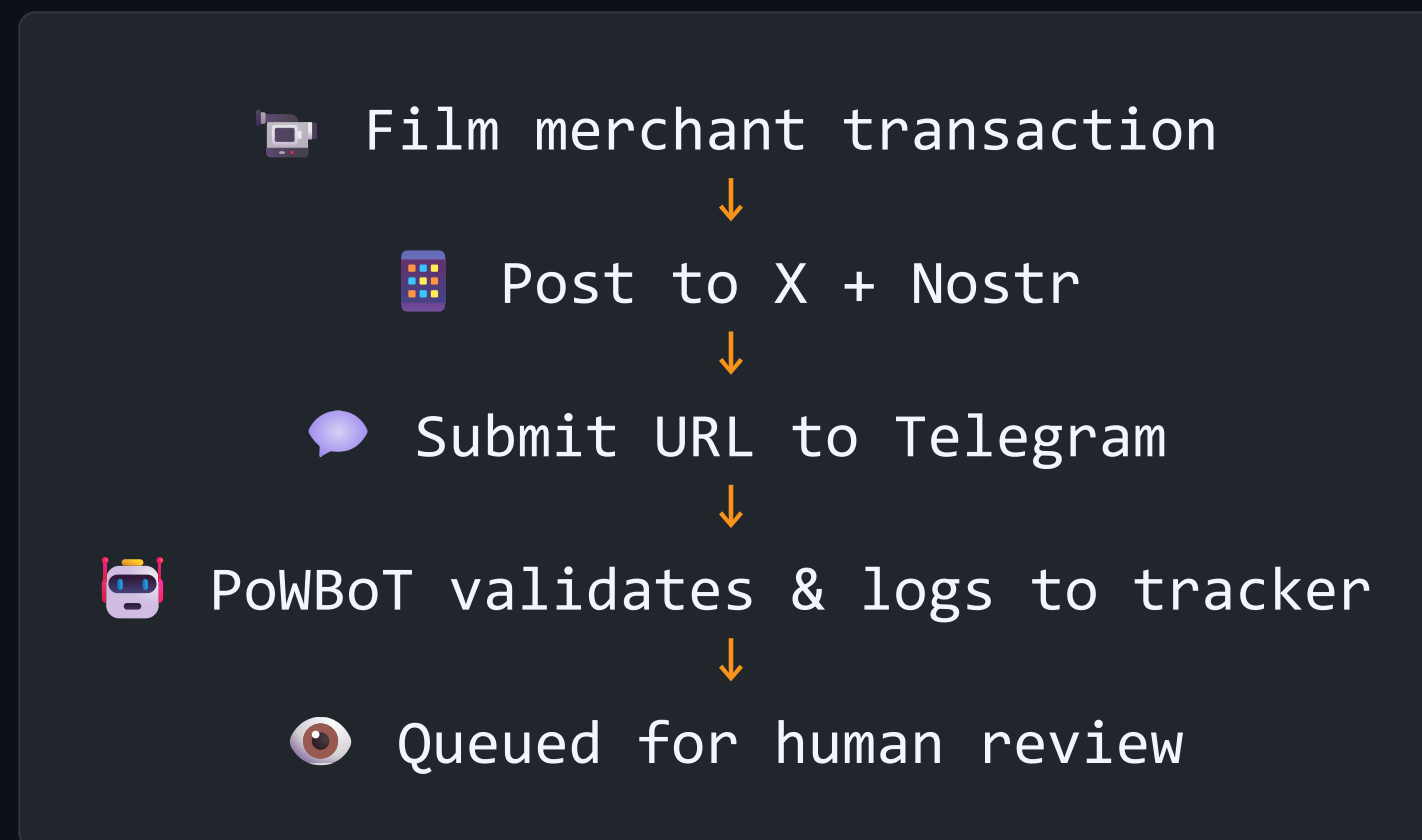
- Local (for now)
- GitHub Pages
- 24/7 uptime



What is PoWBoT?

An automated proof-of-work verification and payments system.

How It Works: Content & Submission



Real people. Real transactions. Real adoption.

Under The Hood: Validation Process

Data Extraction

- Fetch from X/Nostr APIs
- Expand shortened URLs
- Extract Lightning address
- Extract BTC Map link
- Extract project identifier
- Extract country/location
- Identify Lightning provider

Validation & Enrichment

- Check for duplicates
- Validate required elements
- Query BTC Map API
- Fetch merchant name
- Send test payment to merchant
- Like and repost on Nostr
- Log structured data

All automated, near instant and before any human review.

How It Works: Review & Reward

 Reviewer watches video



 Approves or  Rejects



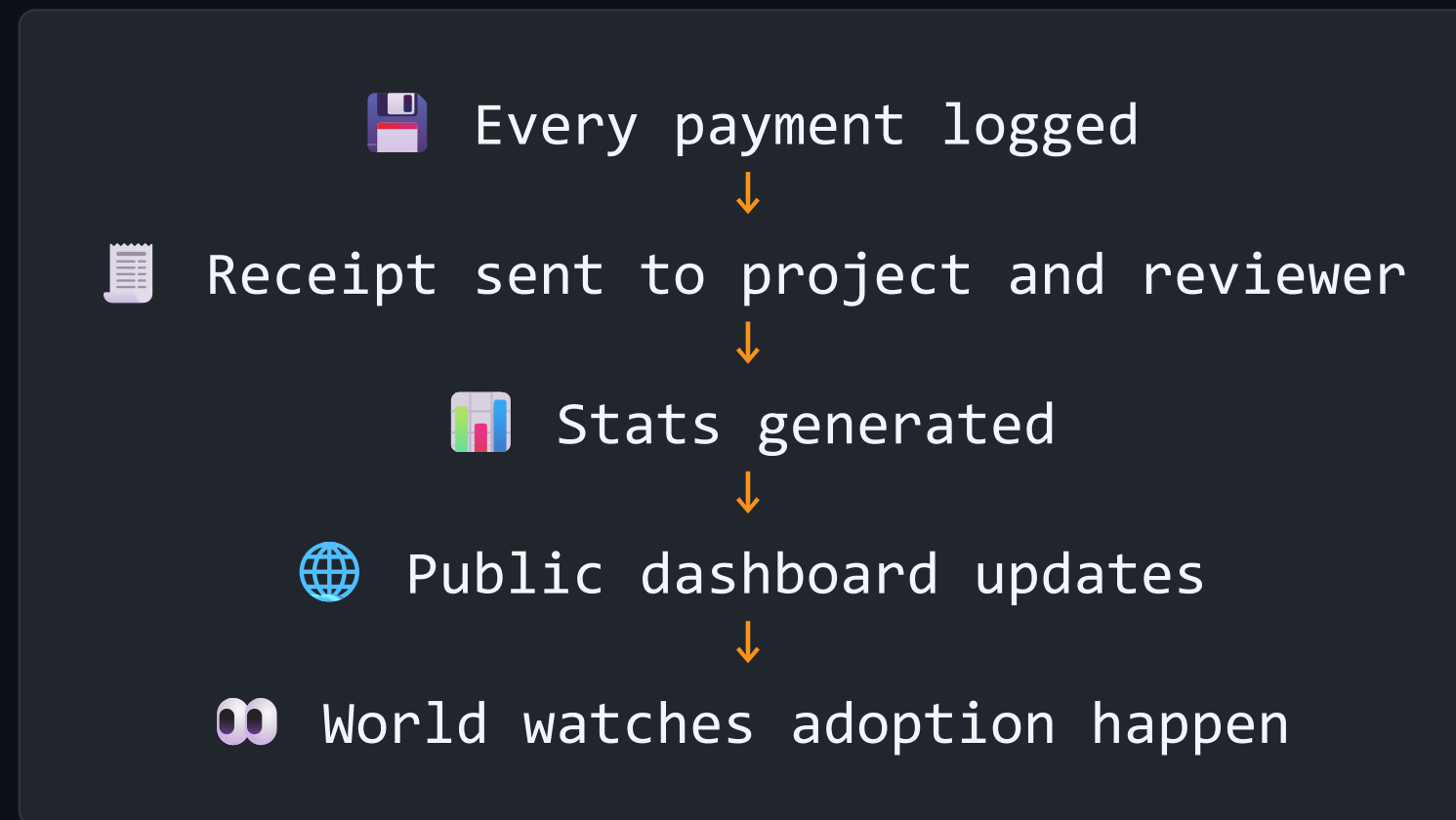
 Instant Lightning payments

Approved: Reviewer + Project + Merchant

Rejected: Reviewer still paid

Human judgment. Everyone's time is valued.

How It Works: Record & Display



Accountable. Visible. Verifiable.



Proof Of Work Video Posts

2 943 messages

Pinned message

<https://bitcoinubuntu.github.io/powbot-stats/>

PoWBot

admin

felix divoar

<https://x.com/i/status/201462415604704...>

PoW Logged to Tracker!

Bitcoin Githurai (Kenya)

PoWBot Tip Sent:

✓ Merchant tip: 21 sats →

Peshcosmetics@blink.sv

11:07

Rosaline - Bitbiashara

<https://x.com/i/status/2014635660649329125>

X (formerly Twitter)

BitBiashara (@BitBiashara) on X

#spedn

Grandsmatt

Dachar@blink.sv...



RB

👍

⚡

🔗

11:55

PoWBot

admin

Rosaline - Bitbiashara

<https://x.com/i/status/2014635660649329125>

PoW Logged to Tracker!

Bitbiashara (Kenya)

PoWBot Tip Sent:

✓ Merchant tip: 21 sats → Dachar@blink.sv

11:56

Rosaline - Bitbiashara

<https://primal.net/e/nevent1qqsvaan3v8lc3289uppza704xdvnm02jukf2alu0xkmgveltjdjn8nlpqa6qukc>

primal.net

Bitbiashara

#spedn

Grandsmatt

Dachar@blink.sv...



RB

👍

⚡

🔗

12:00

PoWBot

admin

Rosaline - Bitbiashara

<https://primal.net/e/nevent1qqsvaan3v8lc3289uppza704xdvnm02jukf2alu0xkmgveltjdjn8nlpqa6qukc>

PoW Logged to Tracker!

Bitbiashara (Kenya)

PoWBot Tip Sent:

✓ Merchant tip: 21 sats → Dachar@blink.sv

12:00

Rosaline - Bitbiashara

<https://x.com/i/status/2014641396523643095>

X (formerly Twitter)

BitBiashara (@BitBiashara) on X

#spedn

Haven food court

Haven@blink.sv...



RB

12:44

PoWBot

admin

Rosaline - Bitbiashara

<https://x.com/i/status/2014641396523643095>

Checking PoW...

Fetching post content...

12:44

PoW Tracker Nov25-Feb26 - Google Sheets

← ↻ 🔍 Search or enter web address

PoW Tracker Nov25-Feb26 ☆ 📁 ☁
File Edit View Insert Format Data Tools Extensions Help

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	A	B	C	D	E	F	G	H	I	J	K
1	🛡 PoWBoT Tracking Sheet	ℹ Contact PoWBot admin for issues/change requests: https://t.me/bitcoinubuntu									
2	Timestamp	Project Name	Merchant Name	Lightning Address	⚡ Tip	Platform	Telegram Link	Notes			
359	2026-01-23 09:01:51 UTC	Bitcoin Ekiti (Nigeria) ₦	KJ Multipurpose Store	adonsken@blink.sv	✅	Nostr	https://t.me/c/2378392967/6553	📺 Duplicate video			
360	2026-01-23 09:07:55 UTC	Bitcoin Githurai (Kenya) ₱	Constanza	Peshcosmetics@blink.sv	✅	X	https://t.me/c/2378392967/6556	👉 Video reviewed			
361	2026-01-23 09:56:08 UTC	Bitbiashara (Kenya) ₱	Grandsmatt	Dachar@blink.sv	✅	X	https://t.me/c/2378392967/6559	👉 Video reviewed			
362	2026-01-23 10:00:38 UTC	Bitbiashara (Kenya) ₱	Grandsmatt	Dachar@blink.sv	✅	Nostr	https://t.me/c/2378392967/6562	👉 Video reviewed			
363											
364											
365											

[illegible]

A screenshot of a Telegram chat interface with a bot named 'PoWBoT'. The chat is in a dark theme. At the top, there's a header bar with the bot's profile picture (a cartoon character), name 'PoWBoT', and a 'bot' label. To the right are search, a square icon, and a three-dot menu. The chat history shows several messages from the bot, each starting with a green checkmark icon and the text 'Payments Approved & Sent'. Each message contains a 'Reviewer' (a Telegram username with a green checkmark), a 'Merchant' (a name with a green checkmark), and a 'Project' (a name with a flag icon and a green checkmark). Below these, it says 'Logged to Payment Audit (rows 1042, 1045, 1046)' or similar. The messages are timestamped at the bottom right. There are also two larger messages with a bar chart icon and the text 'PoWBoT Statistics', followed by 'View live statistics and leaderboards.' and 'Interactive dashboard with project rankings, payment totals, and trends.' Below these are two messages with a document icon and the text 'Main Menu'. At the bottom, there's a 'Menu' button, a paper plane icon, and a text input field with the placeholder 'Write a message...'. On the right side of the input field are three icons: a smiley face, a microphone, and a speech bubble.



Real Conversations

GLENN: "Blink payments sometimes fail"

CLAUDE: [Adds retry logic with exponential backoff]

GLENN: "Duplicates getting through"

CLAUDE: [Creates early duplicate detection]

GLENN: "What if Sheets goes down?"

CLAUDE: [Builds SQLite backup system]

GLENN: "Need low balance warning"

CLAUDE: [Adds balance monitoring and burnrate]

This is how development actually happens.



The Results

January 2026

7

Countries

23

Projects

120

Merchants



Increased Participation

24/7

Uptime



Increased Accuracy

Development Cost

Actual

- Initial testing
- From \$20/month for Claude
- \$0 developer

Accessible to anyone

VS

Traditional

- \$5k–15k developer
- 2–3 months timeline
- \$\$\$ maintenance

\$\$\$\$\$\$

How I Learned

Traditional Path

- ~~Traditional coding courses~~
- ~~Computer science degree~~
- ~~Studying textbooks~~
- ~~Programming bootcamp~~

My Approach

- Learning by doing
- Immediate feedback
- Solving real problems
- Contextual understanding

Problems We Solved Together

Problem: No ledger failsafe



Solution: SQLite backup system

Problem: Manual stat generation



Solution: Automated export

Problem: Shortened URL validation



Solution: URL expansion with retries

Problem: Low balance risk



Solution: Automated warnings

Problem: Unknown project tracking



Solution: Dynamic project mapping



I Didn't Need These First

- ~~Python fundamentals~~
- ~~JavaScript from scratch~~
- ~~CSS specificity~~
- ~~Git workflows~~
- ~~API patterns~~
- ~~Database design~~

I learned by building what I needed.

The Mindset Shift

Traditional Path

Learn → Build → Deploy → Maintain

6-12 months

AI-Assisted Path

Build + Learn → Deploy + Iterate

Days/Weeks

What You Still Need

- **Domain Knowledge** – Understand the problem
- **Critical Thinking** – Evaluate solutions
- **Persistence** – Iterate when stuck
- **Communication** – Explain what you want
- **User Empathy** – Build for real people

Technical skill is accessible. Your vision is essential.

AI Is Great For...

AI Excels

- Syntax & structure
- Bug fixing
- Refactoring
- Best practices
- Documentation
- Rapid prototyping

+

You Bring

- Architecture
- UX design
- Security review
- Innovative ideas
- Business logic
- Edge cases

The Bigger Opportunity

Circular Economies

- Custom tools
- Build immediately
- Your problems
- Your pace

Bitcoin Adoption

- Edge innovation
- Grassroots solutions
- Local solutions
- Rapid iteration

Communities

- Real problems
- No permission
- Share learnings
- Build together



What Could YOU Build?

- Merchant onboarding bot
- Education progress tracker
- Community directory
- Custom reward systems
- Impact dashboard
- Translation bot
- Event coordination
- Payment automation

All buildable by non-programmers now.



PoWBoT Stats

Stay humble, stack stats 🇳🇮

TOP PERFORMERS (24H)



🥇 Afribit Kibera	20 posts
🥈 Bitbiashara	12 posts
🥉 Bitcoin Ekasi	10 posts

TOTAL PAYMENTS

1 598

Merchants	525
Projects	525
Reviewer	548

APPROVAL RATE

96%

Approved	525
Rejected	23
Total reviewed	548

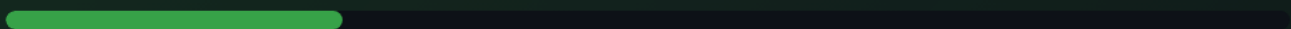
SINCE LAUNCH (2026-01-13)

14 days

Daily Averages	
Posts approved	38
Total payments	114

POWBOT DIFFICULTY ADJUSTMENT

743 blocks



Current block	933 904
Target block	934 647
Est. time	~149h 27m

HIGHLIGHTS

🇳🇮 Active merchants	119
🏆 Top project	Afribit Kibera
📅 Days active	14
📈 Approval record (Jan 24)	72 posts
🌐 Countries active	7

TODAY (updated 21:22:39 UTC)

56 posts 56 approvals 0 rejections 168 payments



TODAY ON X

-  **Bitcoin Dua GH**
Preso's Food and Drinks 19:21
-  **Afribit Kibera KE**
Black and White Fries Corner 19:03
-  **Afribit Kibera KE**
Black and White Fries Corner 19:00
-  **Afribit Kibera KE**
Black and White Fries Corner 18:58
-  **Afribit Kibera KE**
Sokoni Mboga 18:52

Show 21 more

TODAY ON NOSTR

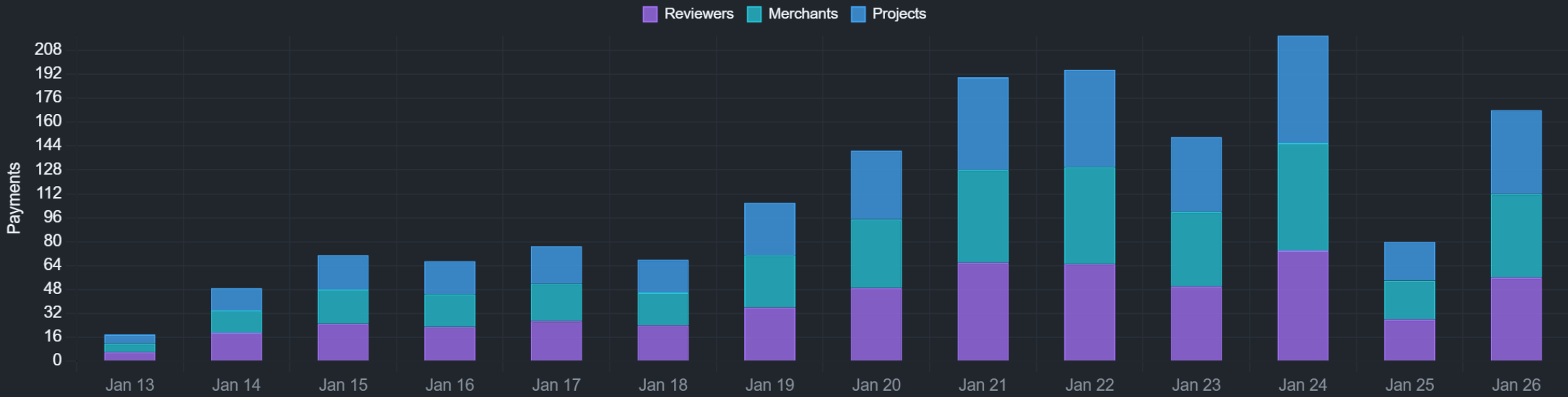
-  **Bitcoin Dua GH**
Preso's Food and Drinks 19:20
-  **Afribit Kibera KE**
Black and White Fries Corner 19:18
-  **Afribit Kibera KE**
Black and White Fries Corner 19:17
-  **Afribit Kibera KE**
Black and White Fries Corner 19:16
-  **Afribit Kibera KE**
Sokoni Mboga 19:14

Show 25 more

LAST 7 DAYS

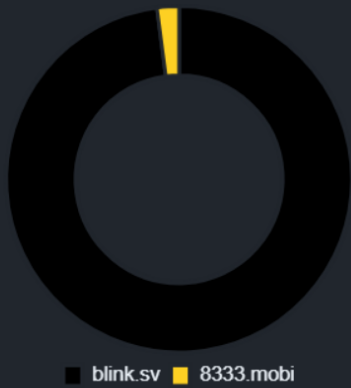
388 posts 377 approvals 11 rejections 1 142 payments

DAILY ACTIVITY



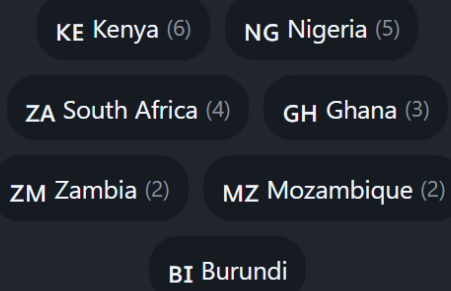


LIGHTNING PROVIDERS

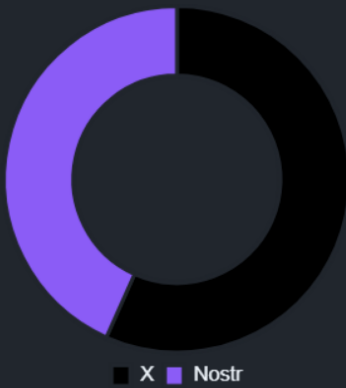


COUNTRIES

7 active



PLATFORMS



PROJECT LEADERBOARD

1	Afribit Kibera KE	107 posts ▼
2	Bitbiashara KE	91 posts ▼
3	Bitcoin Ekasi ZA	53 posts ▼
4	Bitcoin Githurai KE	50 posts ▼
5	Bitcoin Ekiti NG	36 posts ▼
6	Bitcoin Chama KE	22 posts ▼
7	BitKwa NG	21 posts ▼
8	Bitcoin Ikorodu NG	18 posts ▼
9	Bitcoin Dombo MZ	17 posts ▼
10	BitJR Academy ZM	17 posts ▼

Show 13 more

MERCHANT LEADERBOARD

1	Black and White Fries Corner	38 posts ▼
2	Haven food court	21 posts ▼
3	Grandsmatt	17 posts ▼
4	Orero shop	16 posts ▼
5	Kwallos Shop	16 posts ▼
6	Emmy Store	14 posts ▼
7	Chips point	13 posts ▼
8	Mama Nonny Shop	12 posts ▼
9	Jennifer Musya	11 posts ▼
10	Bridgeway Shop	11 posts ▼

Show 109 more



Your Journey Starts Here

1. Identify a real problem

What slows your project down?

2. Describe the solution

How should it work?

3. Start a conversation

"Help me build..."

4. Iterate and learn

Build → Test → Improve

5. Ship it

Real users, real feedback

YOU:

"Track merchant onboarding progress"

CLAUDE:

[Builds signup flow tracker]

YOU:

"Send Bitcoin tips to students"

CLAUDE:

[Creates reward distribution system]

YOU:

"Calculate our runway and burn rate"

CLAUDE:

[Builds financial projections]



Our Stack (All Free/Low-Cost)

Development

- Claude Opus/Sonnet
- VSCode
- Python
- HTML/JavaScript
- python-telegram-bot

Cost

~\$20/mo

(Just Claude)

Services

- Blink API
- Google Sheets
- Nostr SDK
- GitHub Pages
- SQLite

Why We Share Our Journey

- **Share Learnings** – What worked, what didn't
- **Open Approach** – How we think about problems
- **Community Support** – Help others get started
- **Inspire Action** – Show what's possible

Your success helps everyone.



**You Don't Need Permission.
You Don't Need A Developer.
You Just Need To Start.**

What's Next For PoWBoT

- Dedicated server
- Better error handling
- Analytics v2
- Dashboard improvements
- Weekly/monthly reports
- Additional platform support

- Scaling for other projects
- Additional integrations
- Enhanced user features
- Performance optimizations
- Algorithmic difficulty adjustments
- Further automation

Keep building and learning with Claude, one conversation at a time.



Let's Build Together

Try It

Start building today

Share It

What can you solve?

Connect

Help others start

GitHub: [BitcoinUbuntu](#)

X: [@BitcoinUbuntu](#)

Dashboard: bitcoinubuntu.github.io/powbot-stats