




# Bitcoinissimo

Internal Workings and AI for Podcasts

Valerio Vaccaro

Satoshi Spritz Milano

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-  Bitcoin Developer and Hardware Expert
-  Contributor to Bitcoin open source projects
-  DIY hardware enthusiast
- Bitcoin and Liquid Engineer at Blockstream

## Social

-  **LinkedIn** [linkedin.com/in/valeriovaccaro](https://www.linkedin.com/in/valeriovaccaro)
-  **Github** [github.com/valerio-vaccaro](https://github.com/valerio-vaccaro)
- **Telegram** [t.me/valeriovaccaro](https://t.me/valeriovaccaro)

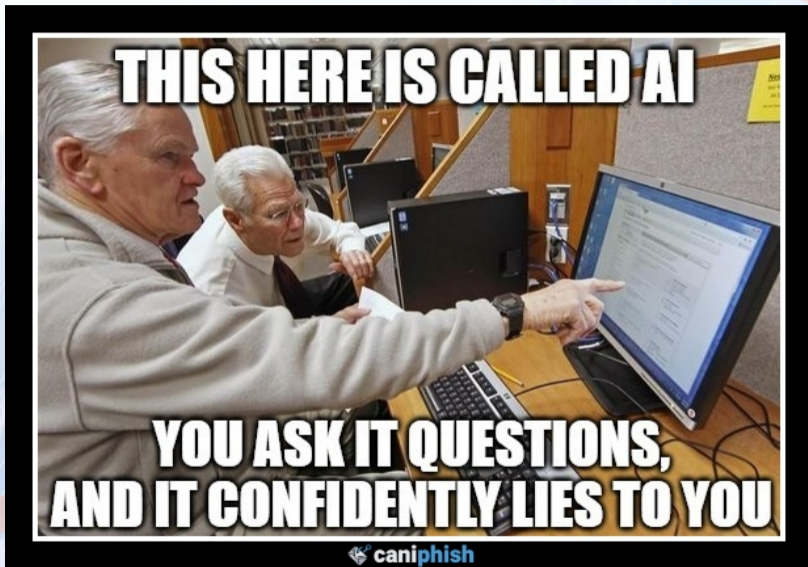


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May this presentation inspire you to become more self-sovereign!





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- 🔑 What is Bitcoinissimo
- ⚙️ Pipeline and architecture
- 📁 Components and data flow
- 🤖 AI overview
- 🎧 AI for creating podcasts
- 📄 Multi-language and publishing

# What is Bitcoinissimo?

## Daily Bitcoin Podcast



- 🎧 Daily podcast on Bitcoin
- 🤖 Automatically generated with AI
- 📈 24h statistics, news, data
- 🔗 Published on Spreaker and podcast platforms

## Characters

- 🗣️ **Monica**: GenZ YouTuber style, enthusiastic
- 😏 **Carlo**: frustrated developer, humor
- 🗣️ Dialogues generated and synthesized in TTS

# General Pipeline

## End-to-End Flow



## End-to-End Flow

- 🗂️ **Input:** RSS feeds, Bitcoin data (bitinfocharts, yfinance)
- 🤖 **Processing:** grammars, Gemini, pystache
- 🗣️ **Output:** WAV, mix with music, MP3, upload

## Grammar and Polygen

- 📄 **grammar/1.titolo.grm**: context-free grammar (BNF)
- ⚙️ **polygen**: generates random text following the grammar
- 🗣️ Example: “Bitcoinissimo the absurd fee-dependent podcast that informs you about the best Bitcoin technologies”

## Random Adjectives

- 🎲 Adjective: absurd, decentralized, volatile, HODL-er...
- 🎲 Adjective2: fee-dependent, halving-addicted, orange-pilled...
- 🎲 Object: on news, on blockchain, on mining...

### Real-Time Bitcoin Data

- 📈 **update\_intro.py**: fetch data
- 🔗 bitinfocharts.com: transactions, blocks, BTC moved
- 📊 yfinance: min/max price 24h (BTC-EUR)
- 🇮🇹 Local date (Italian)

### Pystache Template

- 🔑 **grammar/2.intro.grm**: template with `{{date}}`, `{{tx_last_24}}`, `{{block_last_24}}`, `{{btc_last_24}}`, `{{price_low_24}}`, `{{price_high_24}}`
- ✅ Render with real data





## News Acquisition

- 🔗 **update\_news.py**: feedparser
- 📄 BeautifulSoup: extracts text from HTML
- ⚙️ Creates prompt\_news\_0.txt ... prompt\_news\_N.txt for each article

## AI Transformation

- 🤖 **generate.py**: Gemini 2.5 Flash
- ✅ Prompt: “create description in Italian, interesting, humor, JSON with text”
- 🔑 Output: news\_0.json ... news\_N.json

## Include News and Summary

-  **include\_news.py**: pystache on grammar/3.news.grm
-  Replaces `{{notizia_1}}` ... `{{notizia_5}}` with text from JSON
-  **Summary**: Gemini generates episode description (for metadata)
-  Grammar 3.news: random transition phrases, random AI jokes

## Gemini TTS

- 🗣️ **audio.py**: Google Gemini 2.5 Flash TTS
- 🔑 Model: gemini-2.5-flash-preview-tts
- 🗣️ **Kore** (Monica), **Puck** (Carlo): multi-speaker voices
- ⚙️ Output: WAV 24kHz, PCM 16-bit

## TTS Prompt Format

- 📄 AUDIO PROFILE, DIRECTORS NOTES, character style
- ✅ “Create audio with discussion between Monica and Carlo: Monica: ... Carlo: ...”

## SoX and FFmpeg

- 🎵 **SoX**: concatenates 1.titolo.wav + silence + music + intro + news
- ⚙️ **FFmpeg**: WAV -> MP3
- 🔗 **Spreaker API**: automatic episode upload

## Final Audio Structure

### STRUTTURA AUDIO



## LLM (Large Language Model)

- 🤖 Models that generate text (Gemini, GPT, Claude...)
- 🔑 Input: prompt + context
- ✅ Output: coherent text, JSON, translations
- 📄 Use: news rewriting, summaries, creative generation

## TTS (Text-to-Speech)

- 🗣️ Speech synthesis from text
- 🗣️ Natural voices, multi-speaker, styles
- ⚙️ Gemini TTS, ElevenLabs, Coqui, Google Cloud TTS...

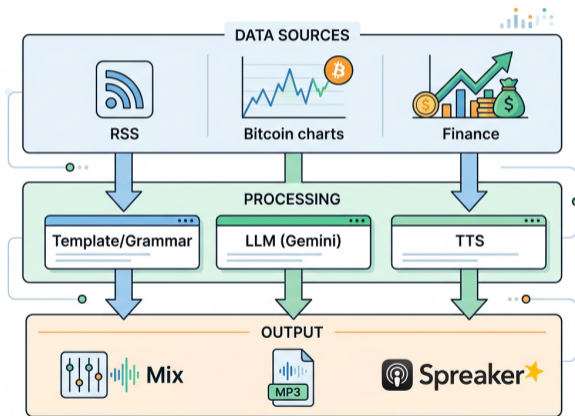
## Content Generation

- 🗣️ **Scripts:** from outline to complete dialogues
- 📄 **Rewriting:** adapt articles for audio format
- 🔑 **Summaries:** episode descriptions, titles
- 🎲 **Variation:** grammars + LLM for non-repetitiveness

## Automation

- ⚙️ Scheduled pipeline (cron)
- 🔗 RSS feed -> news -> generation -> publishing
- ✅ Zero daily human intervention

## Bitcoinissimo Pattern



## Bitcoinissimo Pattern

- 🔑 **Separation of concerns:** each step modular
- ⚙️ **Grammars:** variability without AI (polygen)
- 🤖 **AI where needed:** rewriting, creativity, TTS
- 🔄 **Reproducible pipeline:** same flow every day

## Multi-Language

- 🌐 build.en.sh, build.de.sh, build.es.sh...
- 🤖 Gemini translates prompt and output
- ✂️ Same TTS voices, adapted names (Monica->Monique, Carlo->Charles)

## Python

- 🤖 google-genai, feedparser, BeautifulSoup, pystache, yfinance
- ⚙️ requests, json

## External

- 📄 **polygen**: grammar-based generation (C/OCaml)
- 🎵 **SoX**: audio processing
- ⚙️ **FFmpeg**: format conversion
- 🔗 **curl**: Spreaker API

## Key Points

- 🎧 Bitcoinissimo: AI-generated daily Bitcoin podcast
- ⚙️ Pipeline: RSS + data -> grammars -> Gemini -> TTS -> mix -> Spreaker
- 🤖 AI: LLM for text, TTS for voice, grammars for variability
- 📈 Replicable pattern for other automated podcasts

## Resources

- 📖 Google Gemini API, Polygen grammars

# Summarizing



And not just audio ...

**20M/21M**

95% MINED

FINAL 1 MILLION: ~114 YEARS

PROGRAMMED SCARCITY IN ACTION

ACKNOWLEDGING LEGITIMATE PURPOSES

FROM SUSPICION TO RECOGNITION

CRYPTOCURRENCY MIXERS

U.S. TREASURY DEPARTMENT

MARKET CORRELATION: BTC & TECH STOCKS

BITCOIN (BTC)

TECH STOCKS (e.g., QQQ)

RISK ASSETS: REACTING TO ECONOMIC TRENDS

DRIVERS OF BITCOIN MOVEMENT

75%: UNIQUE FACTORS (ADOPTION, REGULATION, NETWORK ACTIVITY)

25%: ECONOMIC/MACRO

NYDIG EXPERT

INHERENTLY ANTI-AMERICAN: CBDC THREATENS PRIVACY & FREEDOM

U.S. CONGRESSMEN, OPPOSING U.S. CBDC

FINANCIAL PRIVACY

INDIVIDUAL FREEDOM

EMPOWERING HOME MINING

BEYOND WEALTH GENERATION

BITAXE GAMMA

EMPOWERING HOME MINING

DECENTRALIZING THE NETWORK

FOSTERING EDUCATION & PARTICIPATION

The infographic is a detailed illustration. At the top left, a large orange '20M/21M' is displayed. Below it, a conveyor belt carries several gold coins labeled 'BTC' into a large circular opening. To the left of the conveyor, a vertical bar shows '95% MINED' with a corresponding orange bar. Below the bar is a gear icon and the text 'FINAL 1 MILLION: ~114 YEARS'. To the right of the gear is a sign that reads 'PROGRAMMED SCARCITY IN ACTION'. In the center, a line graph titled 'MARKET CORRELATION: BTC & TECH STOCKS' shows two lines: an orange line for 'BITCOIN (BTC)' and a blue line for 'TECH STOCKS (e.g., QQQ)'. Both lines show an upward trend with some volatility. Below the graph is a callout box: 'RISK ASSETS: REACTING TO ECONOMIC TRENDS'. To the right of the graph is a shield icon with a crack, labeled 'FINANCIAL PRIVACY' and 'INDIVIDUAL FREEDOM'. Below the shield is a thought bubble: 'BEYOND WEALTH GENERATION'. In the bottom right, a man in a hoodie sits at a desk with a computer tower labeled 'BITAXE GAMMA' and a tablet. A gold coin labeled 'BTC' is on the desk. Callouts around him include 'EMPOWERING HOME MINING', 'DECENTRALIZING THE NETWORK', and 'FOSTERING EDUCATION & PARTICIPATION'. In the bottom center, a man in a suit points to a box titled 'DRIVERS OF BITCOIN MOVEMENT' which lists '75%: UNIQUE FACTORS (ADOPTION, REGULATION, NETWORK ACTIVITY)' and '25%: ECONOMIC/MACRO'. Below him is a callout: 'NYDIG EXPERT'. On the left, the U.S. Treasury Department logo is shown above a bowl of gold coins. A banner above the bowl reads 'ACKNOWLEDGING LEGITIMATE PURPOSES'. To the right of the bowl is a sign: 'FROM SUSPICION TO RECOGNITION'. At the top right, a group of men in suits are shown in a hearing room. A speech bubble from one of them says 'INHERENTLY ANTI-AMERICAN: CBDC THREATENS PRIVACY & FREEDOM'. A banner in front of them reads 'U.S. CONGRESSMEN, OPPOSING U.S. CBDC'. The background features a globe with network lines.

And ...



THIS PRESENTATION!

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**NO HARD QUESTIONS,  
PLEASE...**



- **Bitcoinissimo:** daily Bitcoin podcast
- **Google Gemini:** generate\_content, TTS
- **Polygen:** polygen.sourceforge.net
- **Pystache:** mustache templates
- **Spreaker:** podcast hosting API

- 🏠 Federation of local Bitcoin groups
- 🎓 Free and privacy-oriented events
- 🤖 BITCOIN ONLY
- 🔧 Weekly Satoshi Spritz Connect online
- 📖 Focused on self-sovereignty learning

## Links

- [satoshispritz.it](https://satoshispritz.it)
- [t.me/SatoshiSpritzConnect](https://t.me/SatoshiSpritzConnect)



- 🇮🇹 Italian Community of Bitcoiners, completely free
- 🤖 BITCOIN ONLY
- 🎓 Focus on education and project development
- 📄 Projects: nodes, hardware wallet, open source, Debian, mnemonics...

## Links

- [officinebitcoin.it](https://officinebitcoin.it)