
BIO-CRYPTOGRAPHY
IS THE GAME-GENIE
IN A POST-
QUANTUM
DYSTOPIA.

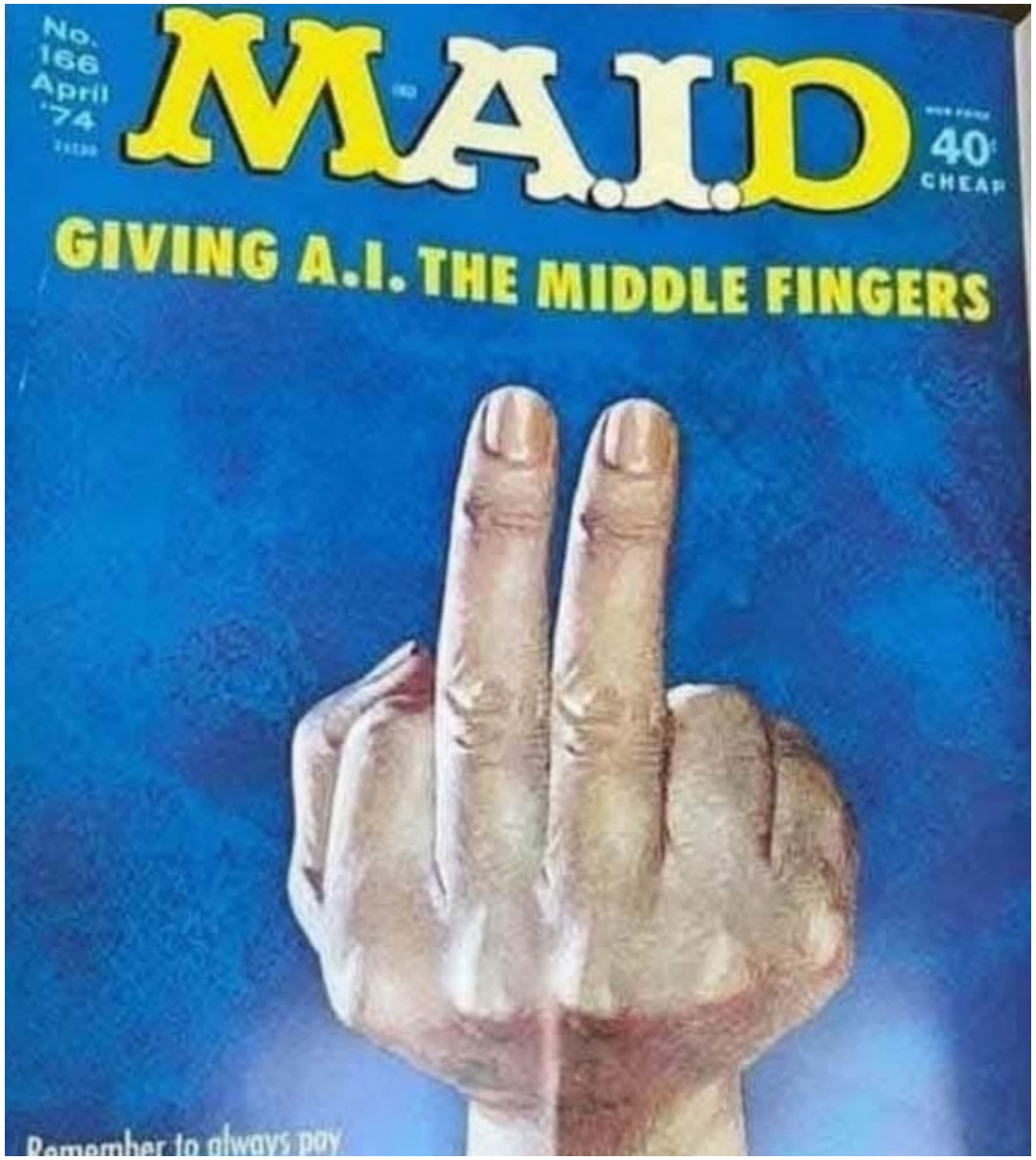

SUPER MARIO WORLD
SUPER NINTENDO
GAME GENIE
VIDEO GAME
ENHANCER
galoob
SUPER NINTENDO

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- Health Scientist – Immunohematology
- CSO Auragens
- Syndicate Laboratories
- Retired US Navy
- Biohacker (+/- Bio)
- Transhumanist



Before we Begin





THE PARADIGM SHIFT: BIOCRYPTOGRAPHY IN A SURVEILLANCE STATE

DNA = NATURAL CIPHER

DNA is the oldest known storage medium now being weapanized for secure data storage and transmission under intence global surveillance.

BEYOND MATH

Unlike traditional cryptography, DNA croptography doesn't rely on mathematical algorithms but on biological processes like synthesis, amplification, and sequencing.

BIOLOGICAL SECURITY LAYER

Without knowing the exact primers, you can't amplity the correct sequence, creating an uncrackable, wetware-based firewall.



HARD TO HACK, HARDER TO TRACK

DNA messages can't be intercepted like digital packets — they require physical access and domain knowledge to decode.

ADLEMAN'S LEGACY (1994)

First proved DNA can solve NP complele problems, opening the doot to encryption protocols that use molecular computation instead of silicon logic.

POST-SURVEILLANCE SURVIVAL TOOL

In a world where AGI monitors every digital byte, DNA cryptography becomes the ultimate off grid communication method: invisible. analog, and embedded in life itself.

FUNDAMENTAL CONCEPTS OF DNA CRYPTOGRAPHY

DNA Cryptography
Directly employs DNA molecules to construct cryptographic systems

Encoding Digital Information
Involves mapping DNA bases--Adenine (A), Cytosine (G), Guanine (G), and Thymine (T)

DNA-Based Algorithms
Specific DNA-based cryptographic systems and novel public-key approaches

Classical Algorithms Reimagined
AES and DES can be re-conceptualized using DNA sequences

Post-Surveillance Survival Tool
In a world where AGI monitors every digital byte, DNA cryptography becomes theult-mate off-grid communuication method:

UNIQUE PROPERTIES OF DNA: DENSITY, DURABILITY, AND PARALLELISM

ULTIMATE CONCEALING MEDIUM
1 gram of DNA could theoretically store 215 PB of data—an unprecedented density.

LOW POWER CONSUMPTION
DNA computing requires no external power once biochemical reactions are underway.

EXTRAORDINARY DURABILITY
Data encoded in DNA can last for centuries, potentially longer than conventional media.

MASSIVE PARALLELISM
Biochemical operations can occur simultaneously, increasing computdational speed.

LONG-TERM POTENTIAL
DNA's attributes suggest a future standard for data storage and secure communication

ENCODING DIGITAL DATA INTO DNA SEQUENCES

MAPPING BITS TO BASES

00 = A
01 = C
10 = G
11 = T

A–C–T



ERROR CORRECTION AND REDUNDANCY

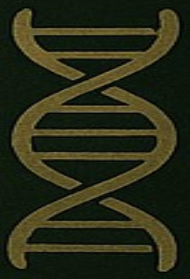
- Physical redundancy ensures multiple copies of each sequence
- Excluding homopolymor runs
- Avoiding specific start cntons

ADVANCEDD ENCODING ALGORITHMS (6.g.. REDNAM)

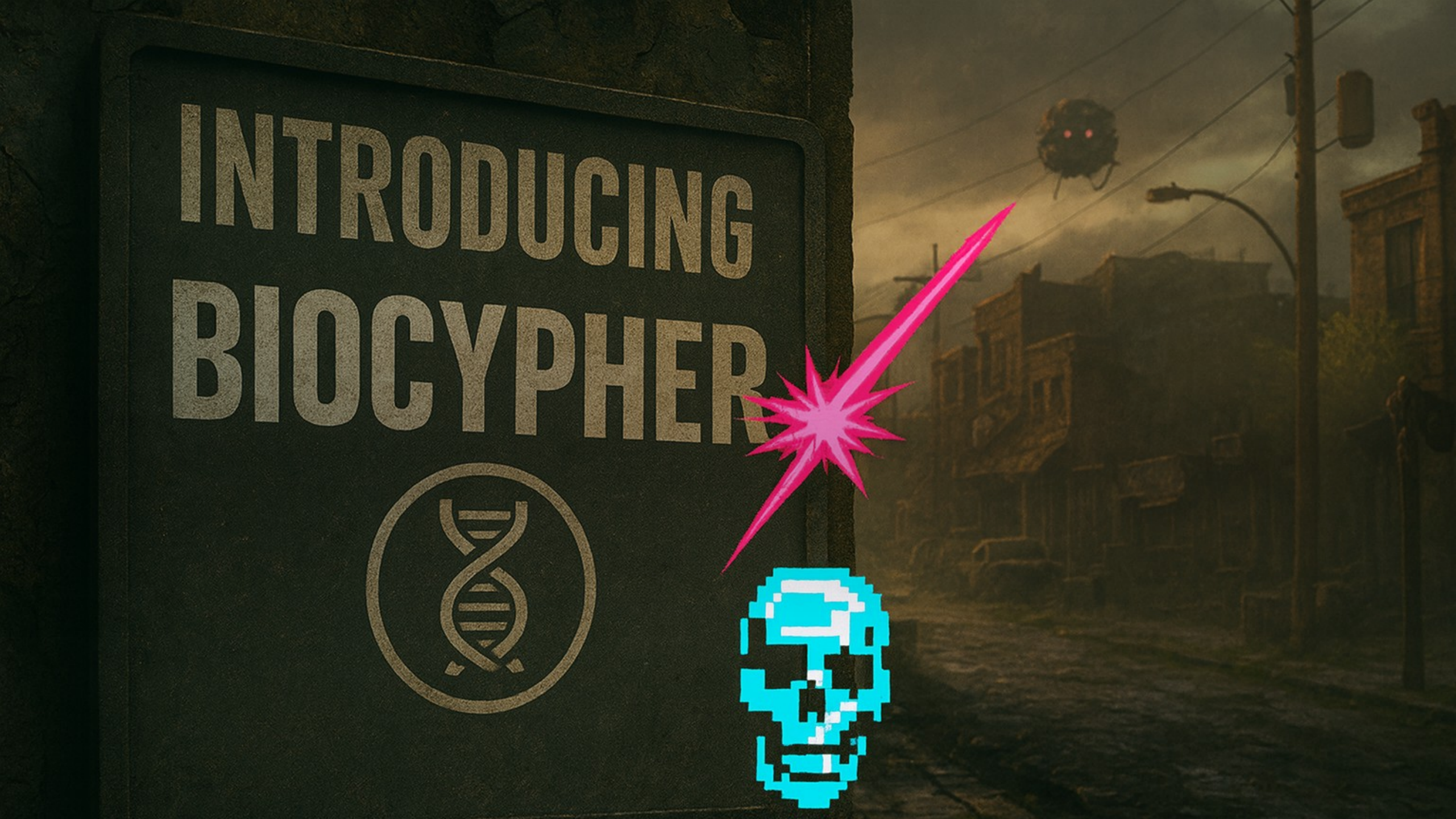
- Convorting hevaca diical data into codons
- Excluding homopolymer runs
- Avaiding specific start codons
- Maintaining balanced GC content
- Fastel edule and ecoding times

PRINCIPLES OF DNA STEGANOGRAPHY

CONCEALING INFORMATION

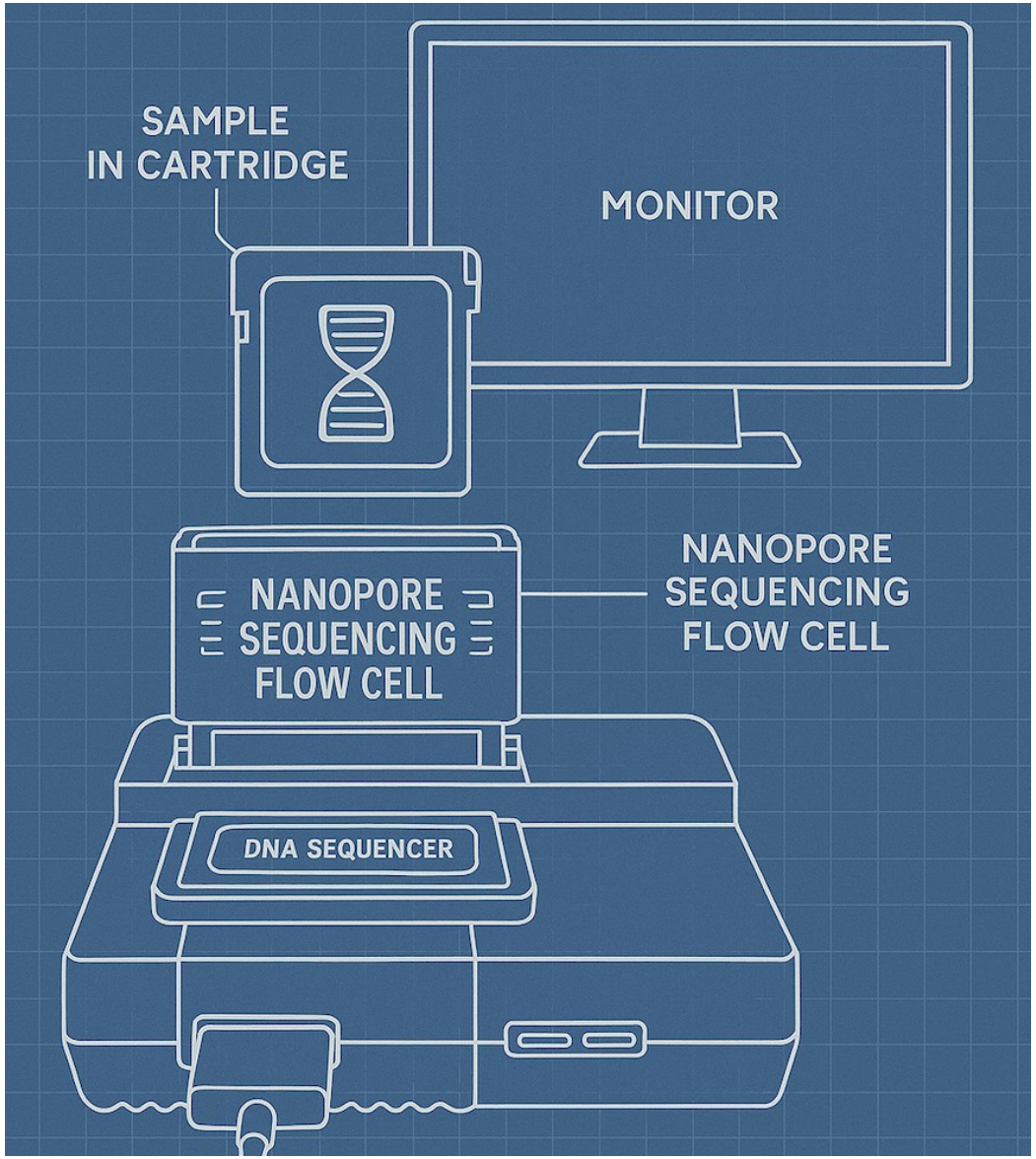


- DNA steganography conceals secret messages within DHA sequences ("cover" medium)
- Hides the very existence of a communication, making detection extremely difficult
- "practically unbreakabable" and "inextricable" without significant biological expertise
- Often involves encrypting the message before embedding it into DNA
- Classical steganography relies on other covers (e.g., text, images, audio)

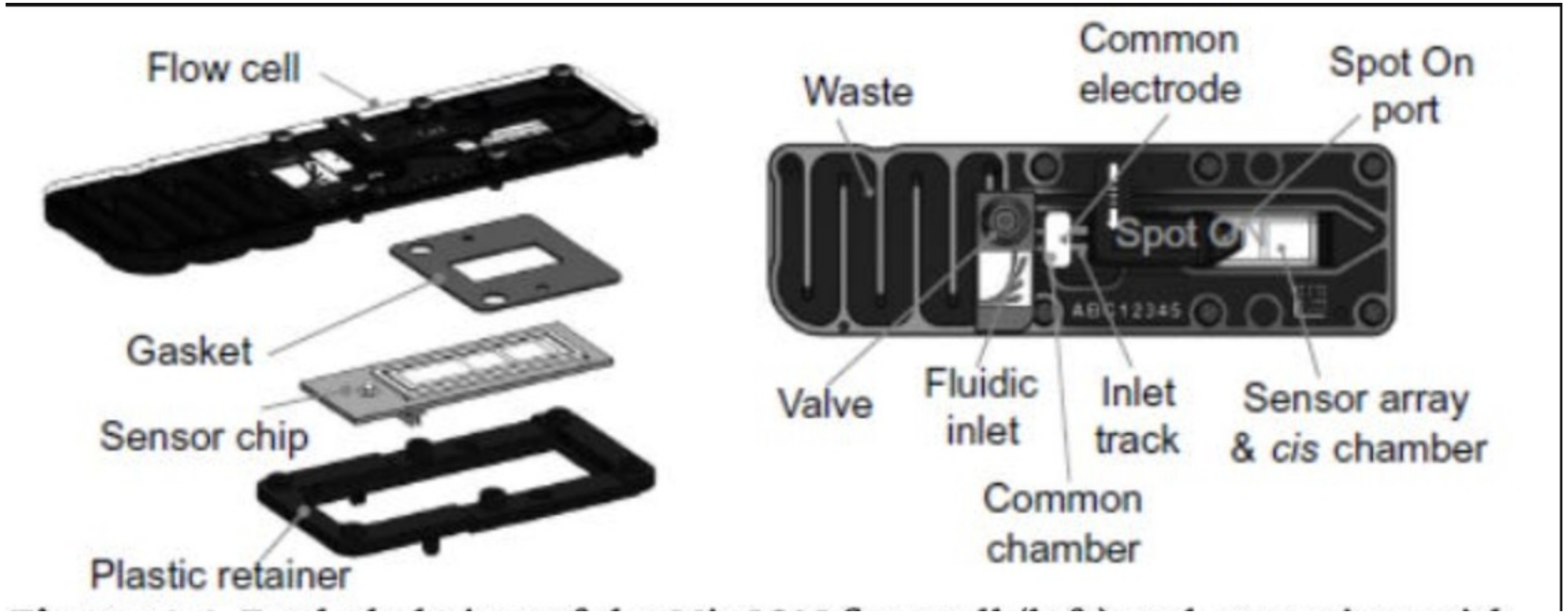

INTRODUCING
BIOCYPHER


PHASE 2

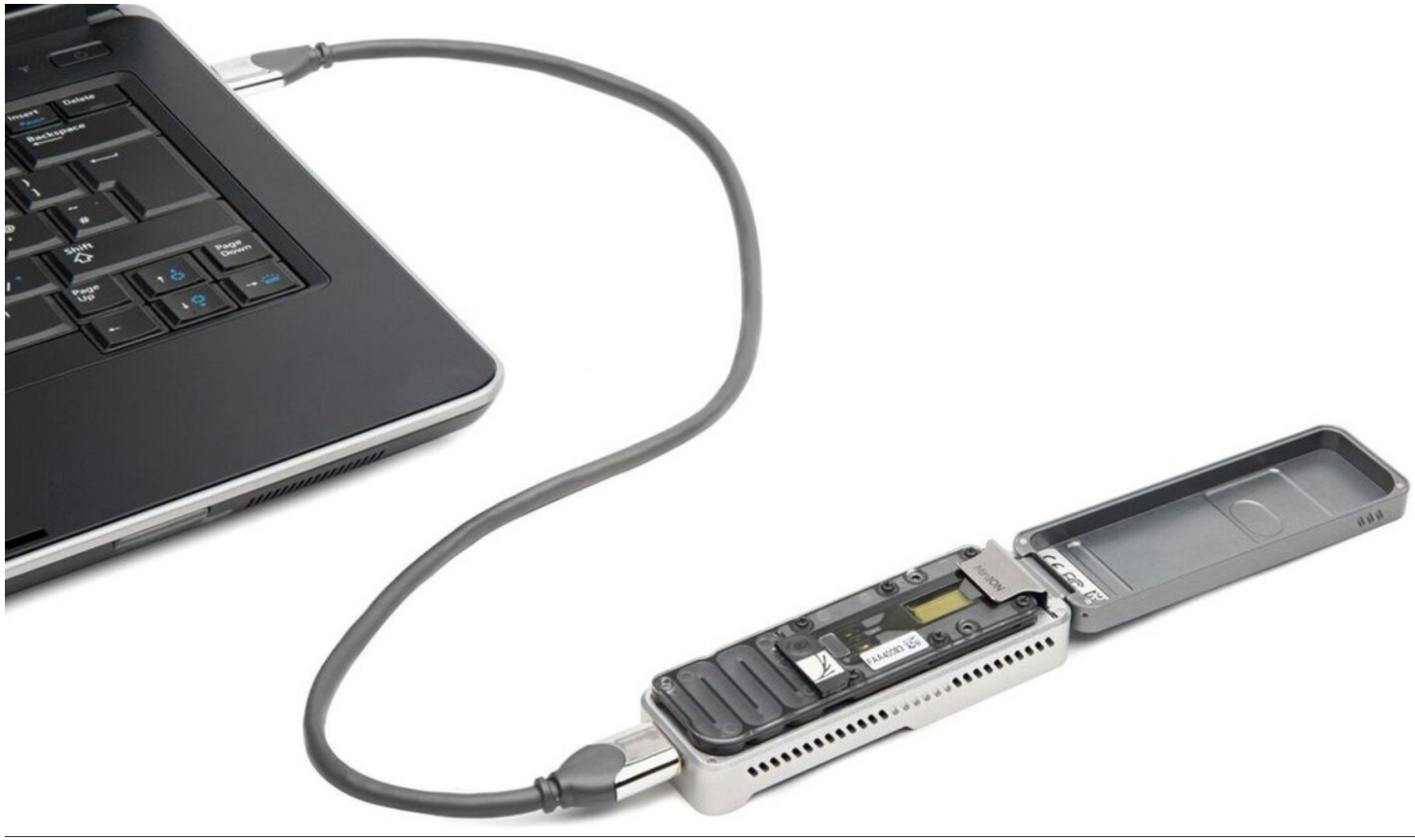

RASPBERRY PI
NANOPORE SEQUENCER

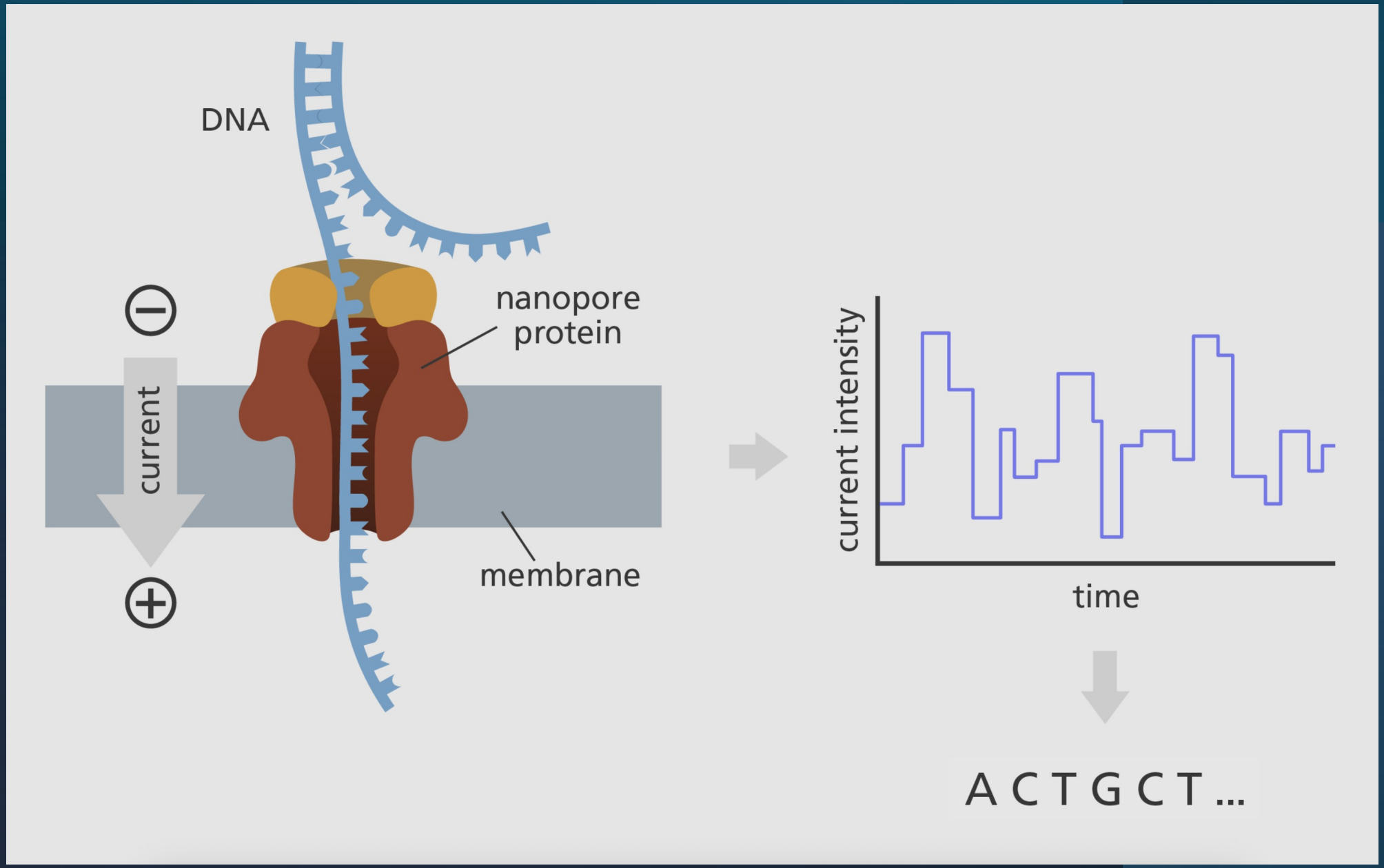

SAMPLE
IN CARTRIDGE
MONITOR
NANOPORE
SEQUENCING
FLOW CELL
NANOPORE
SEQUENCING
FLOW CELL
DNA SEQUENCER

We need to create this?



And This...




DNA
nanopore protein
current
membrane
current intensity
time
A C T G C T ...


PHASE 3


BLOCKPHER


01:18:21



KILOBASER ONE-XT

PERSONAL DNA & RNA SYNTHESIZER

World's first microfluidic chip and cartridge based DNA and RNA synthesizer. Produce custom DNA and RNA on demand. Fast. Affordable. Independent.

VIEW DETAILS


PHASE 1

```
(venv) (base) jamesutley@Jamess-MacBook-Air biocypher_cli % ./biocypher_cli.py interactive

🧬 BioCypher Interactive Session Started
💡 Encode a message to begin, then use analyze, safety, stats, export, etc.
📋 Type 'help' for commands or 'exit' to quit

biocypher> encode
Enter message to encode: where are the epstein files?

✅ Message encoded successfully using basic mode

📊 Encoded DNA Sequence:
TGTGTCCATC TTTGACTCTT ACAATCATTG ACTCTTACAA TGTATCCATC TTACAATCTT
TGAATGAGTG TATCTTTCCT TCGCACAATC TCTCCTTCGA TCTTTGAGAG GG

📏 Sequence length: 112 bases
📝 Original message: where are the epstein files?

💡 Available commands: analyze, safety, stats, export, new, decode, help, exit
biocypher(basic)> analyze

📊 DNA Sequence Analysis (basic mode)
  DNA Sequence Statistics
```

Property	Value
Length	112 bases
A (Adenine)	25

```
(venv) (base) jamesutley@Jamess-MacBook-Air biocypher_cli % ./biocypher_cli.py --help
Usage: biocypher_cli.py [OPTIONS] COMMAND [ARGS]...

  🧬 BioCypher CLI - Advanced DNA Cryptography System

  Convert text messages to DNA sequences and back with multiple encoding
  modes: - Basic: Simple binary-to-DNA mapping - Nanopore: Optimized for
  nanopore sequencing   - Secure: AES encryption + DNA encoding

Options:
  --version           Show the version and exit.
  -c, --config PATH   Configuration file path
  -v, --verbose       Enable verbose output
  --help              Show this message and exit.

Commands:
  analyze   📊 Analyze DNA sequence characteristics and optimization...
  decode    🧬 Decode DNA sequence back to text message Examples:...
  encode    🧬 Encode text message into DNA sequence Examples:...
  password  🔐 Password utilities for secure mode
  safety    🛡️ Perform comprehensive safety screening of DNA...
  validate  ✅ Validate DNA sequence format and structure
```

```
biocypher(basic)> safety

🧬 DNA Safety Screening Report
✅ Safety Status: SAFE

🔪 Sequence Length: 112 bases
🕒 Analysis Time: 2025-08-06 07:53:38

✅ No pathogen signatures detected

✅ No natural genome matches found

⚠️ Sequence Warnings:
   • Repetitive elements detected

📋 Recommendations:
   ✅ Sequence appears safe for synthesis
   ✅ No pathogen signatures detected
   ✅ No natural genome matches found
biocypher(basic)> stats

📊 Session Statistics
📝 Message: where are the epstein files?
🔪 Message length: 28 characters
🧬 DNA sequence length: 112 bases
🔧 Encoding mode: basic
📋 Cached analyses: analyze, safety
biocypher(basic)> export
Enter filename to save sequence: epstein.txt
💾 Sequence saved to epstein.txt
biocypher(basic)> new
🔄 Session reset. Ready for new encoding.
```

Advanced DNA Cryptography System



Encode Message

Convert your text messages into secure DNA sequences using our advanced encoding algorithm.

ENCODE NOW



Decode DNA

Translate DNA sequences back into their original text message format with precision.

DECODE NOW



How It Works

DNA cryptography uses the four nucleotide bases to represent binary data:

A=00 T=01 C=10 G=11



Get Support

Need assistance or want to provide feedback? Contact our support team.

CONTACT US

Convert your text into secure DNA sequences

Enter Text Message:

Where are the Epstein Files?

28 characters

Encoding Mode:

- ✓ Basic DNA Encoding
- Nanopore Optimized
- Secure (AES + DNA)

ENCODE TO DNA

Encoding Modes

Basic Mode

Simple binary-to-DNA encoding (A=00, T=01, C=10, G=11). Fast and suitable for small messages.

Nanopore Optimized

Optimized for nanopore sequencing with homopolymer avoidance, GC balancing, and error correction.

Secure Mode

AES-256-CBC encryption combined with DNA encoding. Provides true cryptographic security with password protection.

> *Choose the mode that best fits your security and sequencing requirements.*

Enter Text Message:

Where are the Epstein Files?

28 characters

Encoding Mode: **Error correction (3x redundancy)**

Nanopore Optimized

ENCODE TO DNA

Encoded DNA Sequence:

Copy

ATCGATCGATCATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCTACGTAATCTCAATCTCAA
CATCATCATCAATCTCATCAATCTCAATCATCATCTCAATCTCATCAATCATCTCAATCTCAATCATCTCATCATCAATCATCTCAATCATCATCTCATCAATCATC
TCAATCTCAATCATCATCTCAATCATCATCATCATCTCAATCTCATCAATCATCATCATCTCATCAATCTCATCATCAATCATCTCAATCATCATCTCATCAATCAT
CTCAATCTCAATCATCATCTCAATCATCATCATCATCTCAATCTCATCATCAATCTCAATCATCATCATCTCATCAATCTCAATCATCATCTCAATCTCATCAATCA
TCTCAATCTCAATCATCATCTCAATCATCATCATCATCTCAATCTCAATCATCATCTCAATCTCATCAATCTCATCATCAATCATCATCATCTCAATCTCATCATCA
ATCATCTCATCATCAATCTCATCATCAATCTCAATCATCATCATCTCATCAATCATCTCAATCTCAATCATCTCATCAATCTCAATCATCTCAATCATCTCATCAAT
CTCATCATCAATCTCAATCATCTCAATCATCATCATCATCTCAATCTCAATCATCATCTCATCAATCTCAATCTCATCAATCTCAATCATCTCAATCATCTCATCAA
TCTCATCAATCATCATCATCTCATCAATCATCTCAATCTCAATCATCTCATCATCAATCATCTCATCATCAATCATCTCATCATCATCATCATCAATCTACGTAATC
ATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCCGATATCG

Safety Screen

Copy

ATCGATCGATCATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCTACGTAATCTCAATCTCAA
CATCATCATCAATCTCATCAATCTCAATCATCATCTCAATCTCATCAATCATCTCAATCTCAATCATCTCATCATCAATCATCTCAATCATCATCTCATCAATCATC
TCAATCTCAATCATCATCTCAATCATCATCATCATCTCAATCTCATCAATCATCATCATCTCATCAATCTCATCATCAATCATCTCAATCATCATCTCATCAATCAT
CTCAATCTCAATCATCATCTCAATCATCATCATCATCTCAATCTCATCATCAATCTCAATCATCATCATCTCATCAATCTCAATCATCATCTCAATCTCATCAATCA
TCTCAATCTCAATCATCATCTCAATCATCATCATCATCTCAATCTCAATCATCATCTCAATCTCATCAATCTCATCATCAATCATCATCATCTCAATCTCATCATCA
ATCATCTCATCATCAATCTCATCATCAATCTCAATCATCATCATCTCATCAATCATCTCAATCTCAATCATCTCATCAATCTCAATCATCTCAATCATCTCATCAAT
CTCATCATCAATCTCAATCATCTCAATCATCATCATCATCTCAATCTCAATCATCATCTCATCAATCTCAATCTCATCAATCTCAATCATCTCAATCATCTCATCAA
TCTCATCAATCATCATCATCTCATCAATCATCTCAATCTCAATCATCTCATCATCAATCATCTCATCATCAATCATCTCATCATCATCATCATCAATCTACGTAATC
ATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCATGACTACGATCCGATATCG

Safety Screen

Length:	A:	T:	C:	G:	GC Content:	Nanopore Risk:
934 bases	310	298	296	30	34.9%	74 ⚠

Nanopore Warnings:

- GC content 34.9% outside optimal range
- 72 homopolymer runs detected

Encoding Modes

Basic Mode

Simple binary-to-DNA encoding (A=00, T=01, C=10, G=11). Fast and suitable for small messages.

Nanopore Optimized

Optimized for nanopore sequencing with homopolymer avoidance, GC balancing, and error correction.

Secure Mode

AES-256-CBC encryption combined with DNA encoding. Provides true cryptographic security with password protection.

> *Choose the mode that best fits your security and sequencing requirements.*

Safety Screening Report

✅ SAFE

Sequence Analysis

Length:	GC Content:	ORFs Found:	Homopolymer Runs:
934 bases	34.9%	0	0

Pathogen Risk Analysis

Risk Level:

LOW

✅ No pathogen signatures detected

Natural Occurrence Check

LOW

✅ No pathogen signatures detected

🧬 Natural Occurrence Check

✅ No natural sequence matches found

⚠️ Warnings

- Repetitive elements detected

💡 Recommendations

✅ Sequence appears safe for synthesis

✅ No pathogen signatures detected

✅ No natural genome matches found

Screening completed: 2025-08-06 08:10:23

Length:	A:	T:	C:	G:	GC Content:	Nanopore Risk:
934 bases	310	298	296	30	34.9%	74 ⚠

Nanopore Warnings:

- GC content 34.9% outside optimal range
- 72 homopolymer runs detected

Translate DNA sequences back to text messages

Enter DNA Sequence:

TGTGTCCATCTTTGACTCTTACAATCCTTGAGACAATGTATCCATCTTACAATCTTTGAATGAGTG
TATCTTTCCTTCGCACAATCTCTCCTTCGATCTTTGAGAGGG

108 bases

Decoding Mode:

Basic DNA Decoding

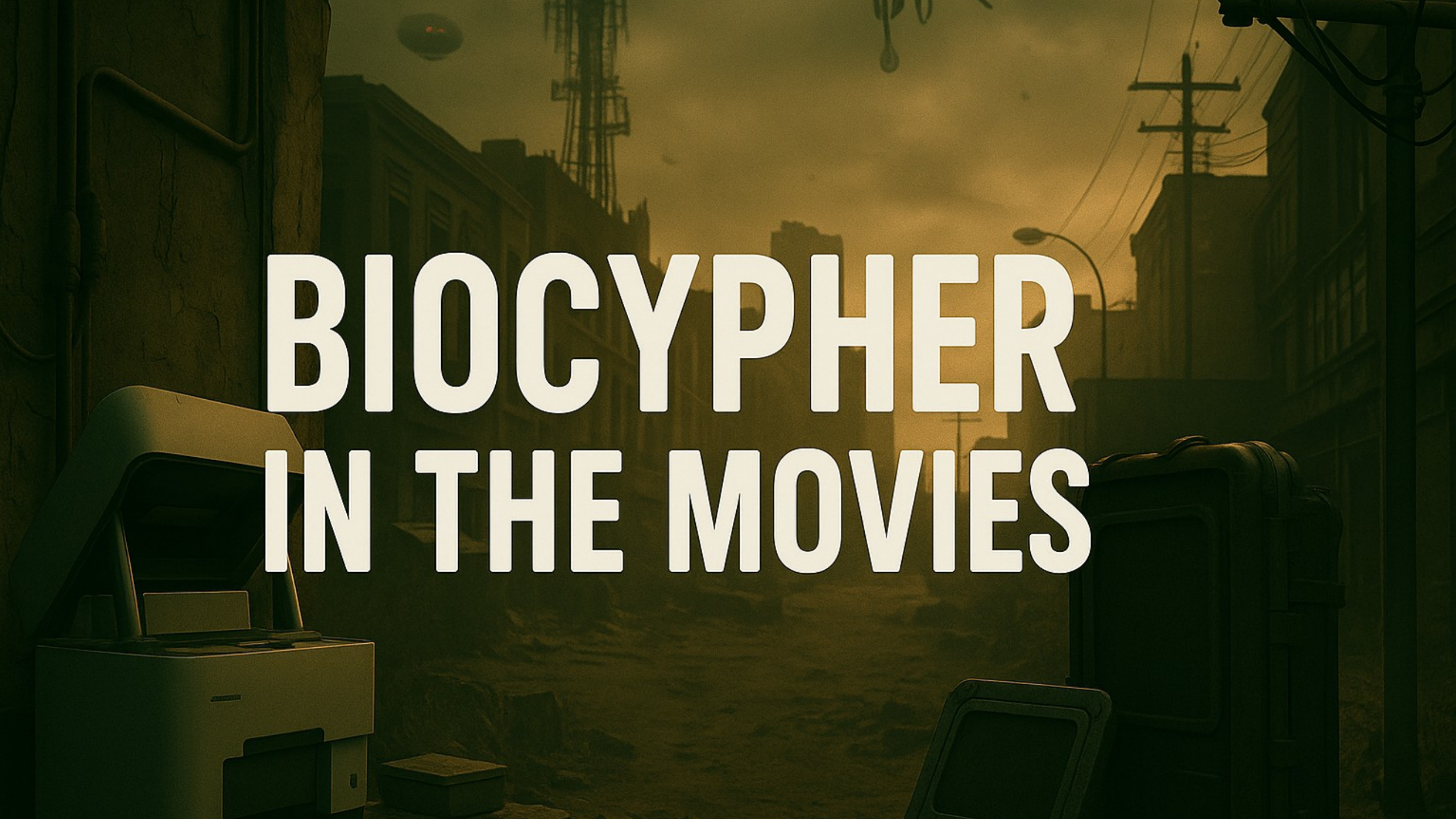
Valid DNA sequence

DECODE TO TEXT

Decoded Message:

where is the epstein files? Copy

How Decoding Works


BIOCYPHER
IN THE MOVIES


NATIONAL TREASURE
The Epstein Files


TRANSFER
IN PROGRESS
BIOCYPHER
CONFIDENTIAL
FILES


BIOCYPHER
NANOPORE SEQUENCER


DNA
SYNTHESIZER



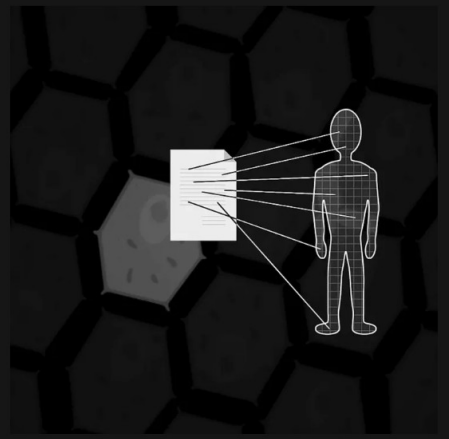

CYPHER
UROMARK FIL26


Coming Soon
BIO-WIKI-LEAKS
BIOCYPHER

BiOCyph3R

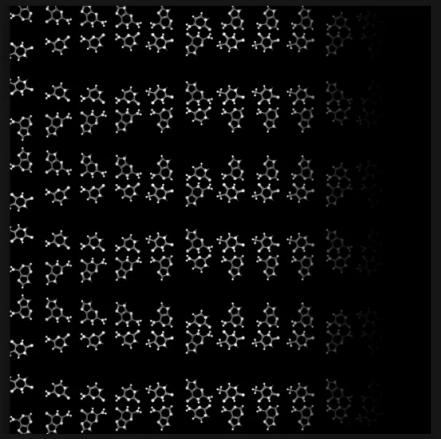
DNA doesn't just store life, it stores secrets.

Help us launch through crowdfunding this project



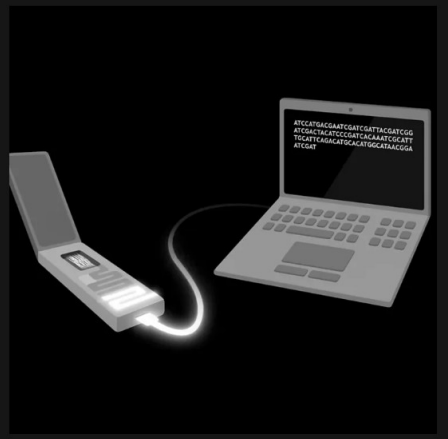
Encode

BioCypher's encoding agent transforms your cryptographic messages into DNA sequences using advanced plasmid design algorithms. The AI orchestrates viral scaffold selection and molecular origami patterns, embedding your data into self-assembling biomolecular structures that quantum computers cannot crack.



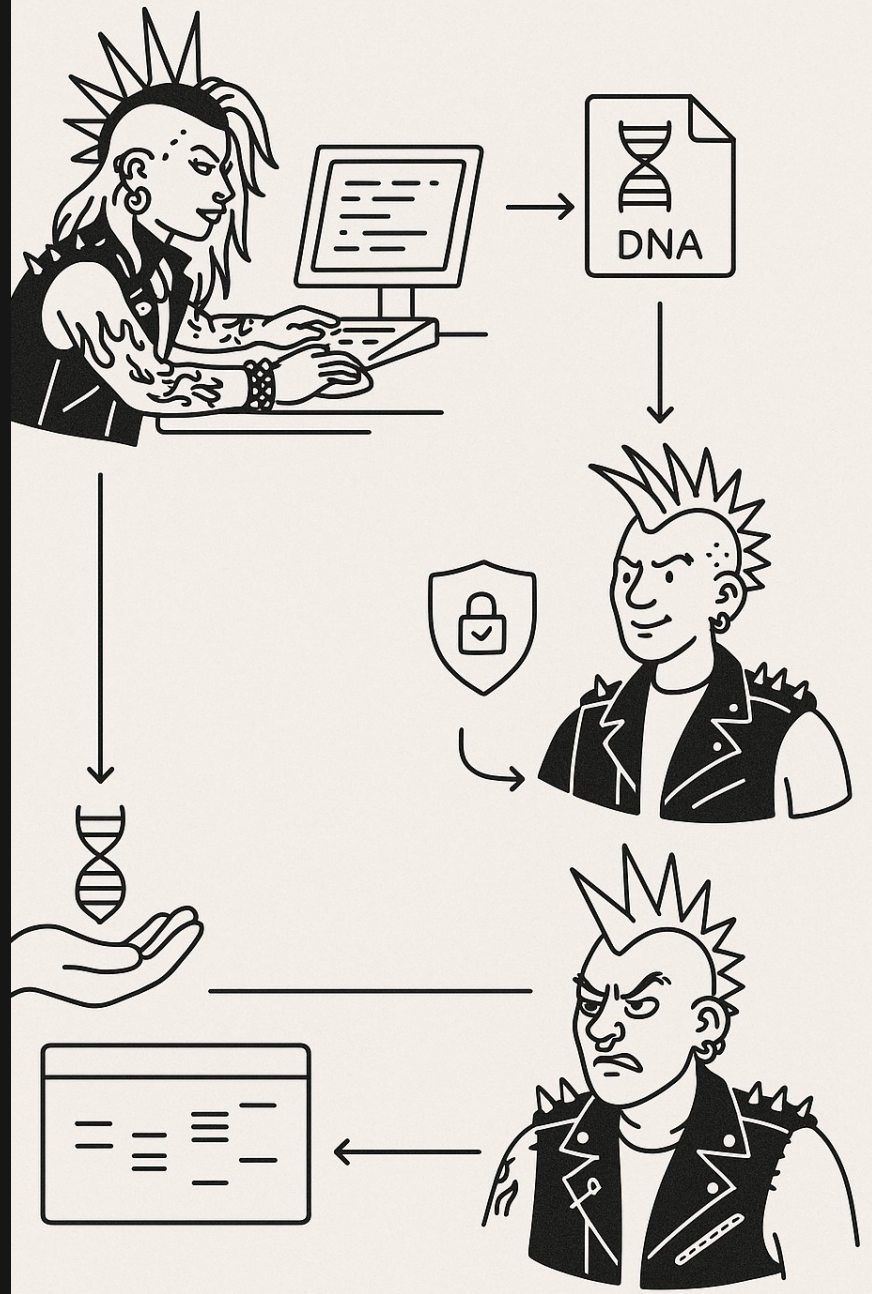
Transfer

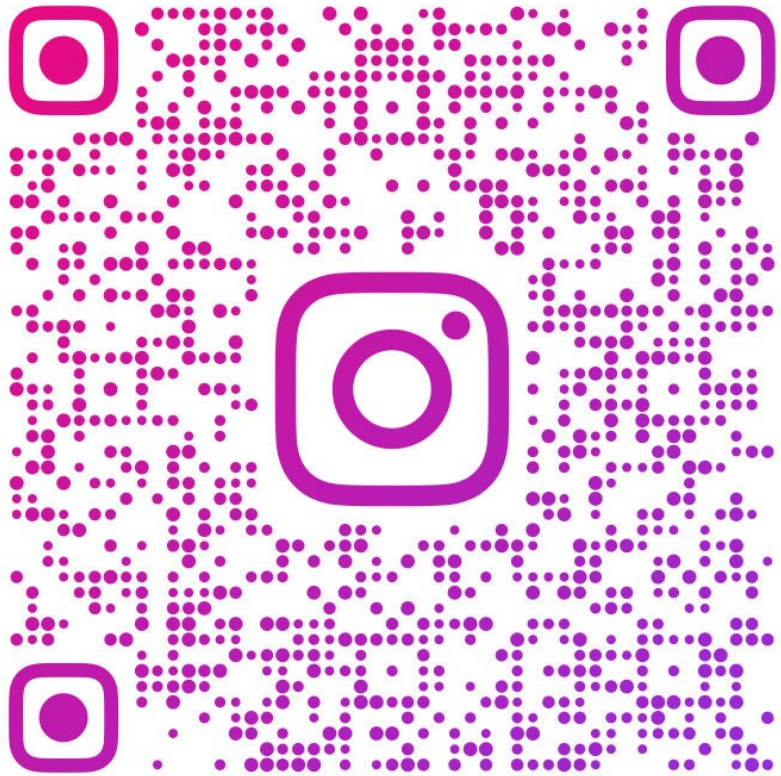
The transfer workflow embeds your encoded DNA message into biological host systems, creating living storage vessels that can replicate and transmit your encrypted data. Custom agents manage the integration process, ensuring message integrity while the biological carrier moves undetected through any environment.



Decode

Using nanopore technology powered by a Raspberry Pi flow cell setup, BioCypher's decoding agents sequence the DNA and extract your original message. The autonomous workflow processes raw nanopore data, identifies the cryptographic patterns, and reconstructs your encrypted communication from the molecular structure.





@DR.JAMES.UTLEY


s4mpl3bi4s.17

Thank you!


SUPER MARIO WORLD
GAME GENIE
VIDEO GAME ENHANCER
SUPER NINTENDO
POWER
RESET