POWERPUNK
Z/OS FOR GENZ
HACK THE MAINFRAME

Jonathan Prince

Senior Consultant at NVISO
Was a kid in the 80s
Owns an AS/400
Is building a Dalek

Shoutout

Phil Young & Chad Rikansrud

aka.

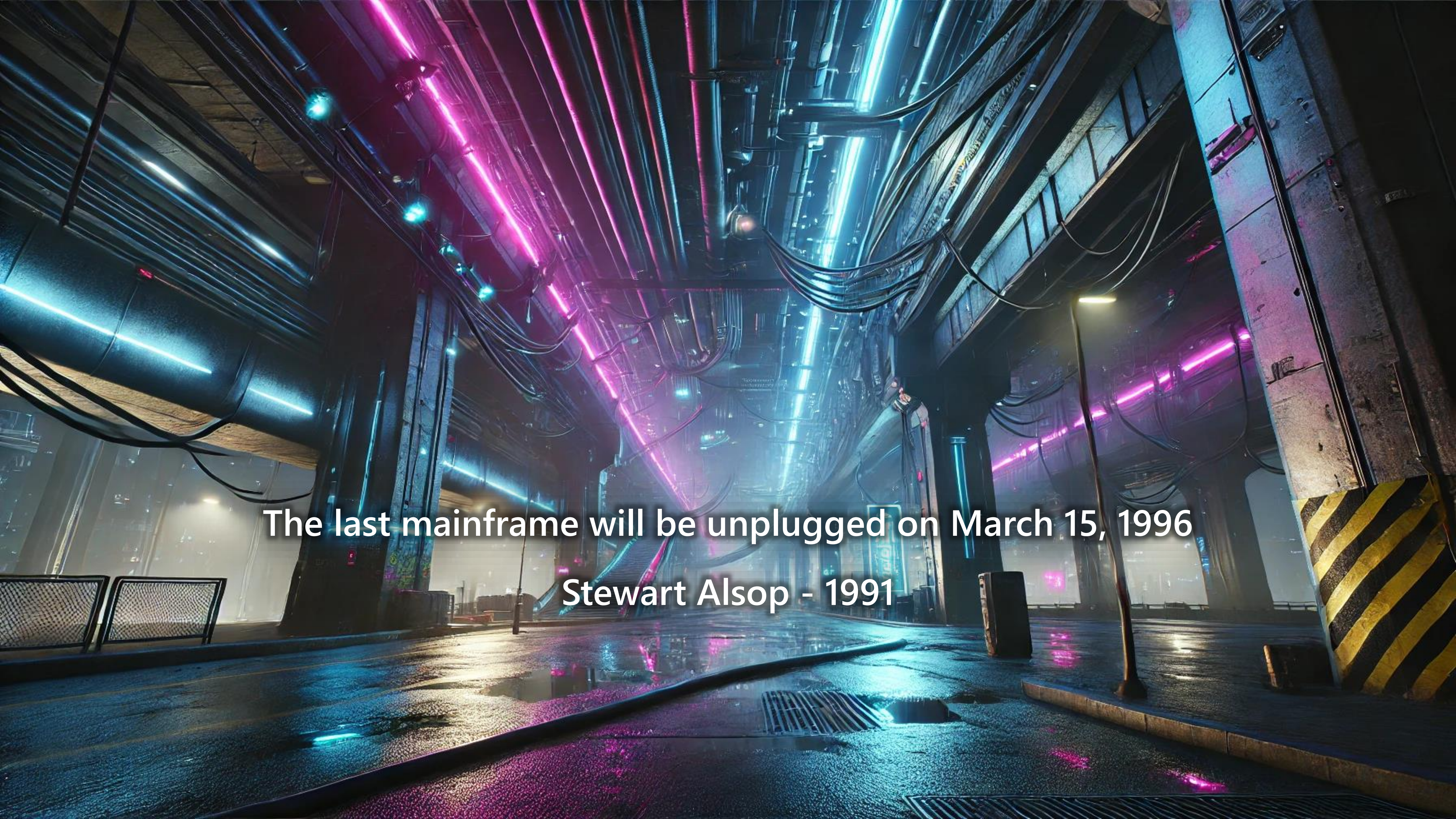
Soldier of Fortran

&

Bigendian Smalls

Authors of the Evil Mainframe course

The OGs of Mainframe Hacking



The last mainframe will be unplugged on March 15, 1996

Stewart Alsop - 1991

Stewart Alsop - 2002

Myth #1

Mainframes are outdated, technological dinosaurs

Meanwhile, in the 60s…

IBM Z16

On-Chip AI processing

Quantum Safe

Up to 40TB of RAM

250Gb/s inter processor communication

Up to 19 billion business transactions/day

Availability level of seven nines

Tested withstand 8.0 earthquake

Statistics (2020)

90% of Credit Card transactions

77/100 Top Banks

All the Top 10 Insurers

71% of the Fortune 500

68% of the worlds IT workload

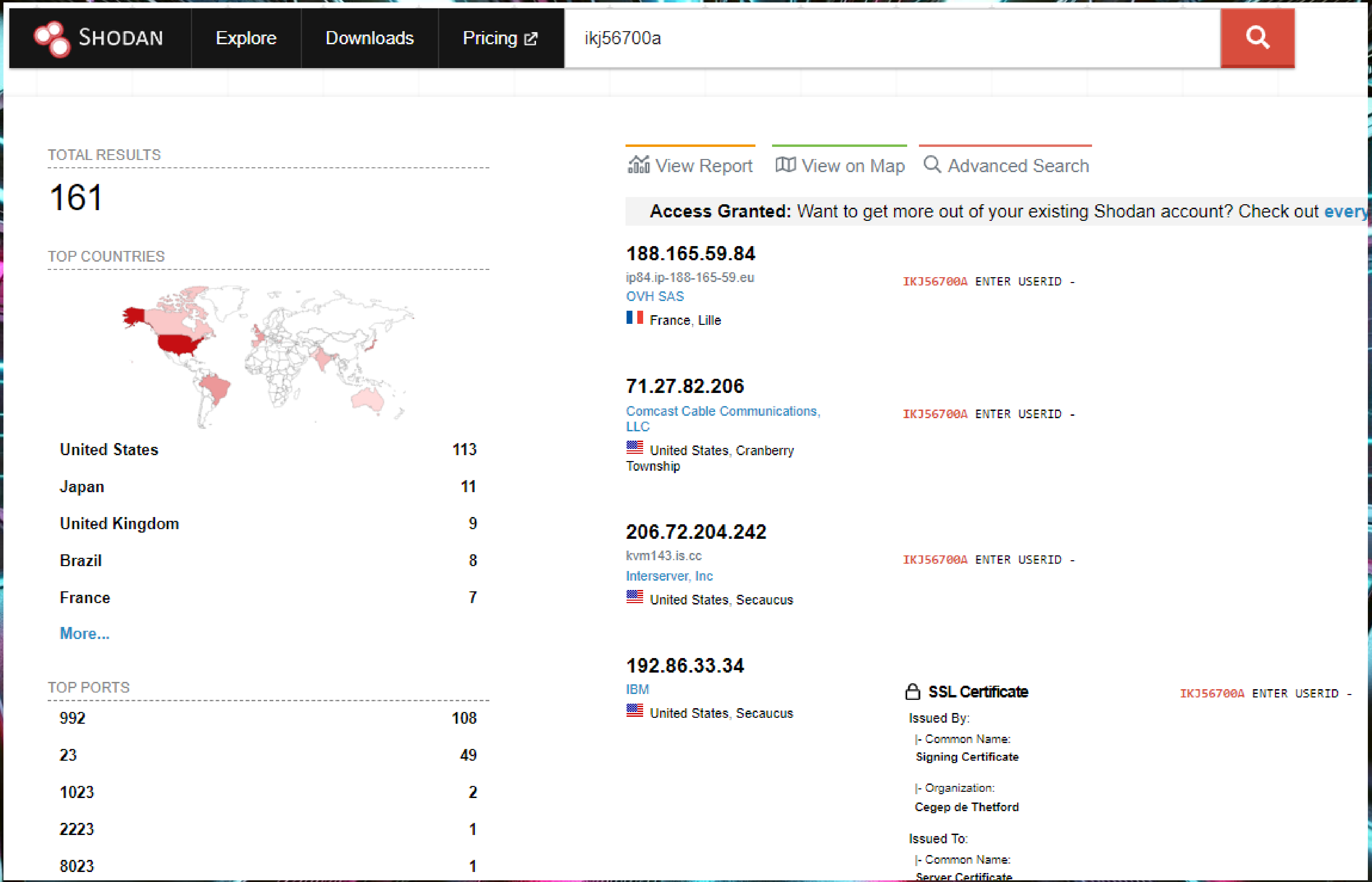
Market size of $2.5 Billion in 2023, with a CAGR of 6.4% forecast until 2032

Myth #2

Mainframes are impenetrable digital fortresses

Why aren’t Mainframes immune to compromise?

It’s a computer.
Built by Humans.
Configured by Humans.
Maintained by Humans.
Used by Humans.



ikj56700a

TOTAL RESULTS

161

TOP COUNTRIES

United States	113
Japan	11
United Kingdom	9
Brazil	8
France	7

TOP PORTS

992	108
23	49
1023	2
2223	1
8023	1

Access Granted: Want to get more out of your existing Shodan account? Check out every

188.165.59.84
ip84.ip-188-165-59.eu
OVH SAS
France, Lille

```
IKJ56700A ENTER USERID -
```

71.27.82.206
Comcast Cable Communications, LLC
United States, Cranberry Township

```
IKJ56700A ENTER USERID -
```

206.72.204.242
kvm143.is.cc
Interserver, Inc
United States, Secaucus

```
IKJ56700A ENTER USERID -
```

192.86.33.34
IBM
United States, Secaucus

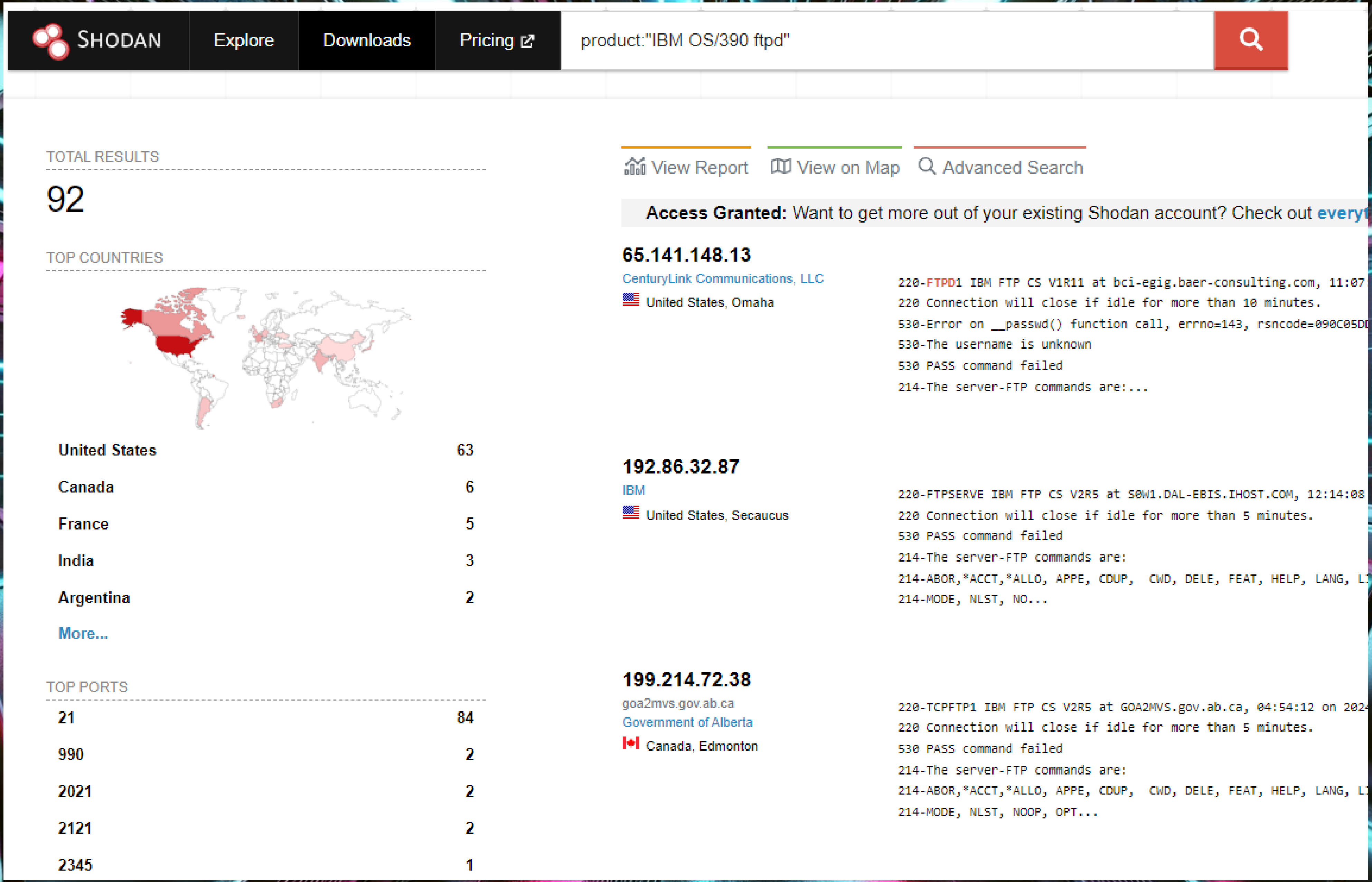
SSL Certificate

Issued By:
|- Common Name:
Signing Certificate

|- Organization:
Cegep de Thetford

Issued To:
|- Common Name:
Server Certificate

```
IKJ56700A ENTER USERID -
```



product:"IBM OS/390 ftpd"

TOTAL RESULTS

92

TOP COUNTRIES

United States	63
Canada	6
France	5
India	3
Argentina	2

More...

TOP PORTS

21	84
990	2
2021	2
2121	2
2345	1

Access Granted: Want to get more out of your existing Shodan account? Check out everyt

65.141.148.13

CenturyLink Communications, LLC

United States, Omaha

```
220-FTPD1 IBM FTP CS V1R11 at bci-egig.baer-consulting.com, 11:07
220 Connection will close if idle for more than 10 minutes.
530-Error on __passwd() function call, errno=143, rsncode=090C05DD
530-The username is unknown
530 PASS command failed
214-The server-FTP commands are:...
```

192.86.32.87

IBM

United States, Secaucus

```
220-FTPSERVE IBM FTP CS V2R5 at S0W1.DAL-EBIS.IHOST.COM, 12:14:08
220 Connection will close if idle for more than 5 minutes.
530 PASS command failed
214-The server-FTP commands are:
214-ABOR,*ACCT,*ALLO, APPE, CDUP,  CWD, DELE, FEAT, HELP, LANG, LI
214-MODE, NLST, NO...
```

199.214.72.38

goa2mvs.gov.ab.ca

Government of Alberta

Canada, Edmonton

```
220-TCPFTP1 IBM FTP CS V2R5 at GOA2MVS.gov.ab.ca, 04:54:12 on 2024
220 Connection will close if idle for more than 5 minutes.
530 PASS command failed
214-The server-FTP commands are:
214-ABOR,*ACCT,*ALLO, APPE, CDUP,  CWD, DELE, FEAT, HELP, LANG, LI
214-MODE, NLST, NOOP, OPT...
```

Logica & Nordea

Well documented Mainframe compromise

Attributed to Gottfrid Svartholm a.k.a. anakata

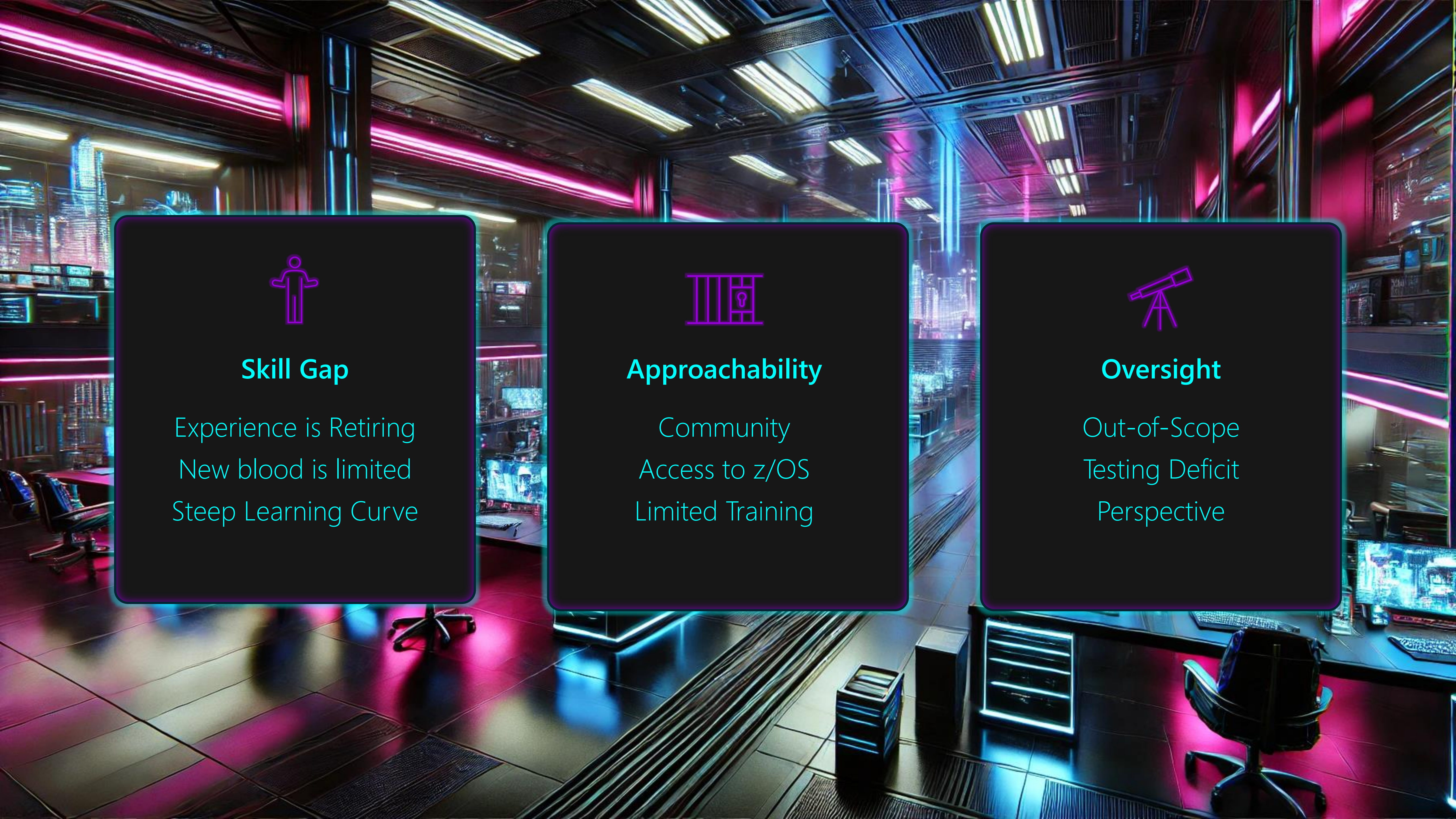
Initial access via stolen credentials

Used 2 zero-day vulnerabilities

Developed exploits using Hercules Emulator

Challenges

Current Issues and the Future of Mainframe Security



Skill Gap

Experience is Retiring

New blood is limited

Steep Learning Curve

Approachability

Community

Access to z/OS

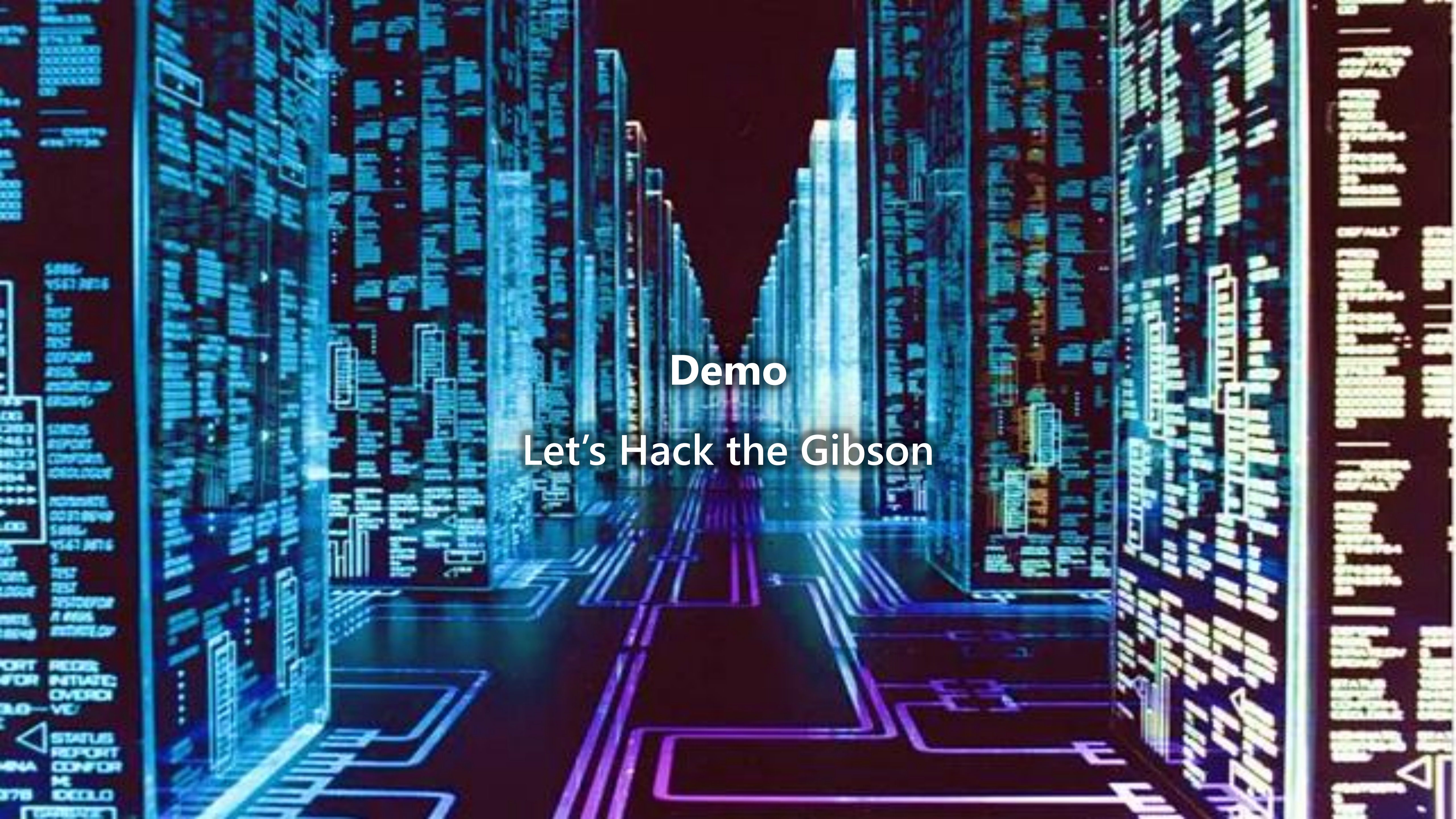
Limited Training

Oversight

Out-of-Scope

Testing Deficit

Perspective

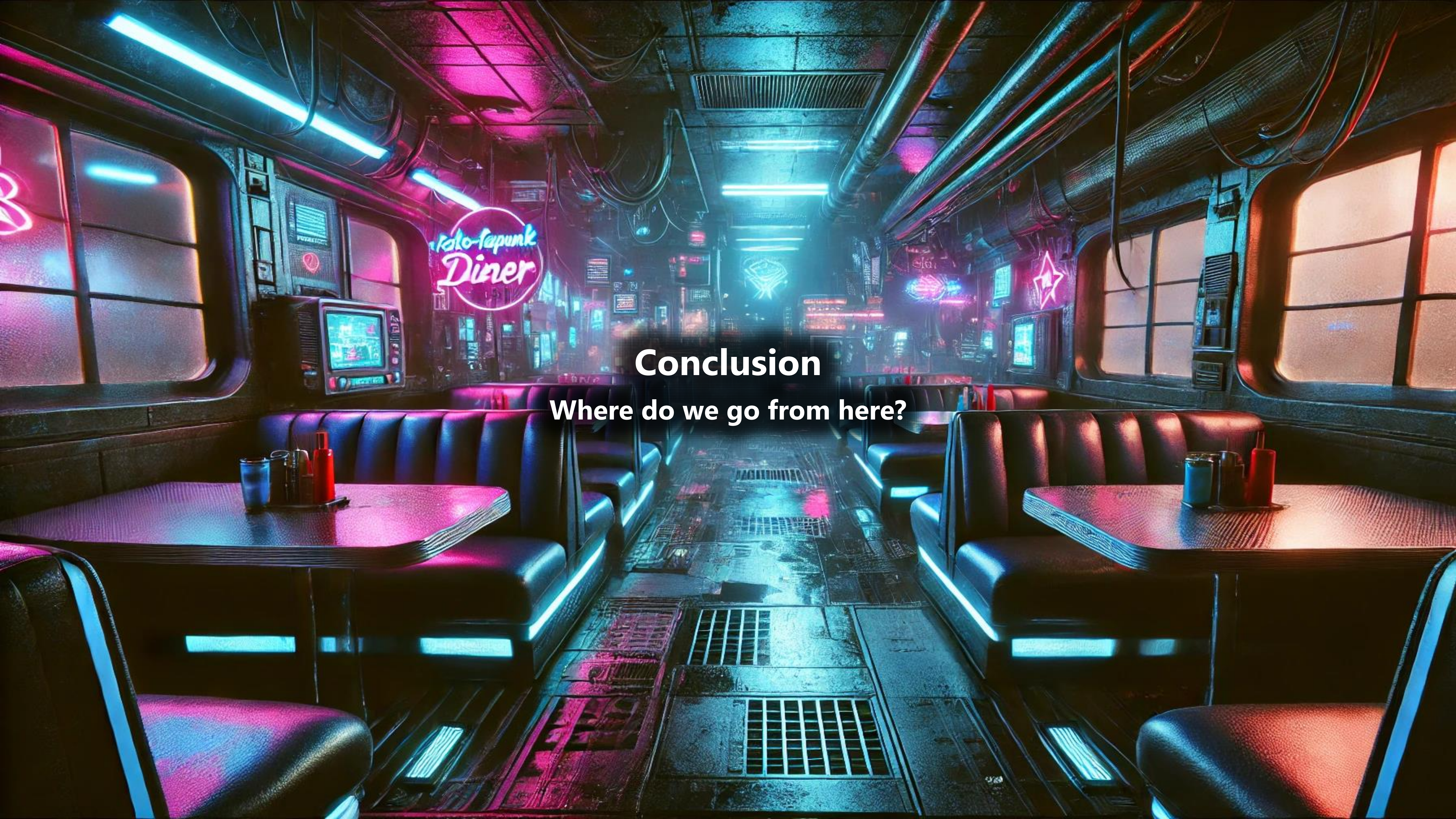


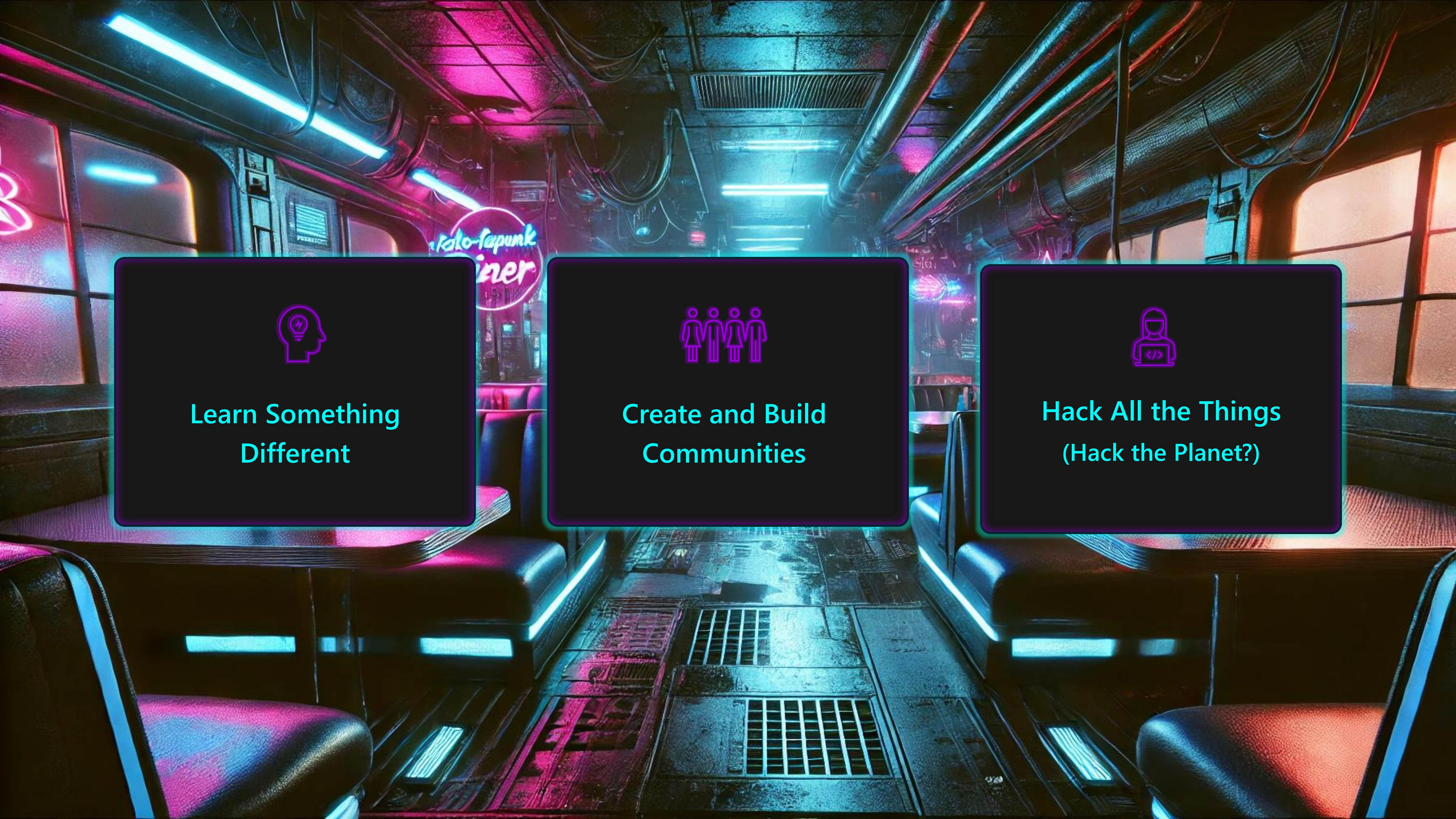
Demo

Let's Hack the Gibson

Conclusion

Where do we go from here?





Learn Something Different

Create and Build Communities

Hack All the Things

(Hack the Planet?)

Thank you for your Attention

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