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Evolution of Binary Code Analysis

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Why am I here?

- I've been analyzing all sorts of binary code for about 8 years
  - For commercial and government entities
  - Mostly malicious code, but also …
    - I've lost my source code! How do I read my data?
    - Did he steal my code?
    - … you get the idea
- Now I get to step back and think of new ways to approach the problem

- **So… how have I seen the tools & techniques used in code analysis evolve over the years?**

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In the beginning…

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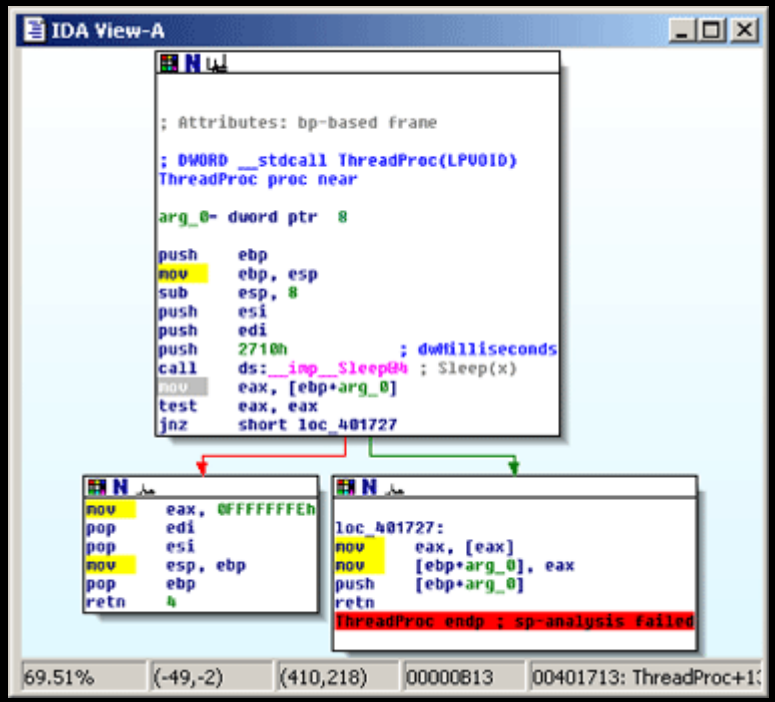
Tools, then and now

(Insert obligatory IDA Pro Screenshots here)

```
0100762C                push    eax             ; dwLanguageId
0100762D                push    eax             ; dwMessageId
0100762E                lea     eax, [ebp+Buffer]
01007634                push    eax             ; lpSource
01007635                push    FORMAT_MESSAGE_ALLOCATE_BUFFER or FORMAT_MESSAGE_FR
0100763A                call    ds:FormatMessageW
01007640                mov     eax, [ebp+var_4]
01007643                leave
01007644                retn
01007644 sub_10075F7    endp
01007644
01007645
01007645 ; --------------- S U B R O U T I N E ---------------------------------
01007645
01007645 ; Attributes: bp-based frame
01007645
01007645 sub_1007645    proc near               ; CODE XREF: sub_10064BB+15C↑p
01007645                                        ; sub_1007645+AA↓p
01007645
01007645 Type           = dword ptr -14h
01007645 cbValueName    = dword ptr -10h
01007645 phkResult      = dword ptr -0Ch
01007645 var_8          = dword ptr -8
01007645 cbData         = dword ptr -4
```



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New techniques?

- Volatile memory acquisition & analysis
  - Enables analysis of “live” binaries as running on system
- Focus on automation, less manual static analysis
  - Automated clustering techniques
  - Automated *dynamic sandbox analysis*
- Don’t forget:
  - It takes 10 years for a product to reach “usable” state
  - We are still innovating!
  - Unavoidable subjectivity in analysis

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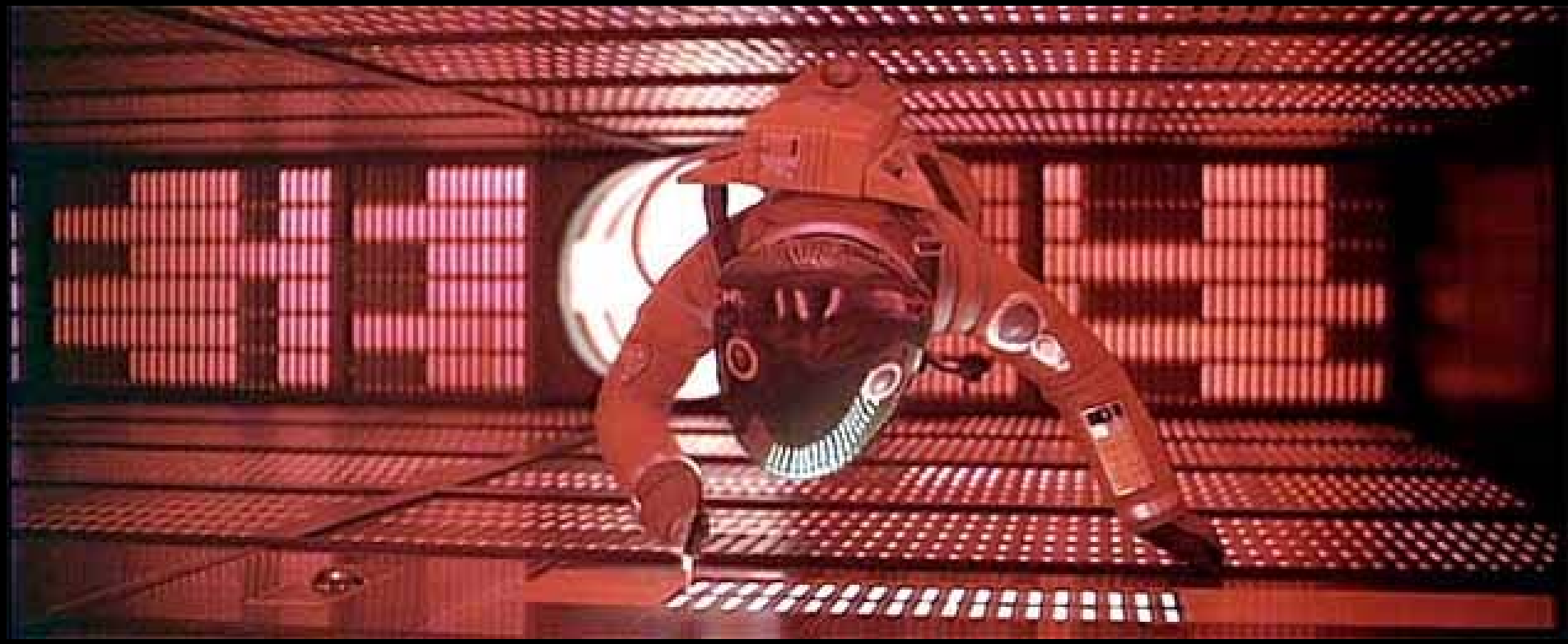
What’s next?



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