Crushing the Coding Interview for the Anxious

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github.com/aaron678/coding-interview

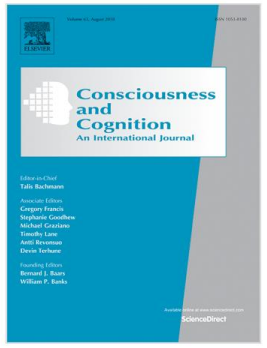
Attention is a Limited Resource

- Software agent model of cognition
- Short term memory as a workspace
- New situations increases cognitive load

A software agent model of consciousness

Stan Franklin & Art Graesser

Consciousness and Cognition 8 (3):285-301 (1999)



Abstract

Baars (1988, 1997) has proposed a psychological theory of consciousness, called global workspace theory. The present study describes a software agent implementation of that theory, called ''Conscious'' Mattie (CMattie). CMattie operates in a clerical domain from within a UNIX operating system, sending messages and interpreting messages in natural language that organize seminars at a university. CMattie fleshes out global workspace theory with a detailed computational model that integrates contemporary architectures in cognitive science and artificial intelligence. Baars (1997) lists the psychological ''facts that any complete theory of consciousness must explain'' in his appendix to In the Theater of Consciousness; global workspace theory was designed to explain these ''facts.'' The present article discusses how the design of CMattie accounts for these facts and thereby the extent to which it implements global workspace theory

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Attention is Limited cont.

- Emotional response (panic/ anxiety) can limit bandwidth
- May not be able to recall basic facts
- Lower problem solving performance

Solution- reduce anxiety

- Habituate exposure to triggers
- Simulation
- Devise a strategy for when you don’t know something
- Reduce the importance

Solution- reduce cognitive load

- Practice with realistic environment
- Overpractice simple coding exercises
- Alternatives to whiteboarding
- Talk out problem statement and algorithm first

The Coding Interview

- Coding interview is a collaborative problem solving exercise
- Not algorithm memorization
- Master the simple things. Don’t cram advanced topics.
- Take initiative in driving the problem solving

How to Practice

- Create your own coding interview
- Backwards (in context) thinking
- Overpractice simpler algorithms instead of more complex ones.
- Practice with non-hinting cloud IDEs (codebunk.com) AND whiteboarding.
- Read the Java source and comments

src/share/classes/java/lang/String.java

```
/**
 * Converts this string to a new character array.
 *
 * @return  a newly allocated character array whose length is the length
 *          of this string and whose contents are initialized to contain
 *          the character sequence represented by this string.
 */
public char[] toCharArray() {
    // Cannot use Arrays.copyOf because of class initialization order issues
    char result[] = new char[value.length];
    System.arraycopy(value, 0, result, 0, value.length);
    return result;
}
```

What Interviewers Really Want

- How you solve the coding problem
  - State problem, API first, talk through algorithm
  - Corner cases, ‘fail the test’
  - Don’t freeze, make progress
  - Improve algorithms, refactor
  - Space complexity vs time complexity tradeoff
- Talk tech
  - Managerial or architectural view

What Interviewers Really Want cont.

- Personal Projects
  - Github, cloud, blog

SUCCESS IS CANNOT BE PERSUED BUT IS ATTRACTED BY WHO YOU BECOME

-- JIM ROHN

Resources

- Non-hinting cloud IDE- www.codebunk.com
- N-back game for improving short term memory
  en.wikipedia.org/wiki/N-back
  brainworkshop.sourceforge.net/tutorial.html
- Google coding interview
  https://www.youtube.com/watch?v=XKu_SEDAykw
- A Software Agent Model of Consciousness - Graesser and Franklin, *Consciousness and Cognition*, 1999.
  Takeaway- Automating a task through overpractice reduces load on the conscious attention needed for problem solving.

  http://ccrg.cs.memphis.edu/assets/papers/Modeling%20Consciousness%20and%20Cognition%20in.doc