

# Bringing STEM to Romance

Writing Tech Savvy Characters While Avoiding Sterotypes

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GOALS

*Things I want to do with you:*

- WATCH STAR WARS**
- make a blanket fort
- PLAY VIDEO GAMES**
- play D&D
- FIGHT ZOMBIES**
- COSPLAY*
- READ COMICS**
- Go on an adventure
- cuddle

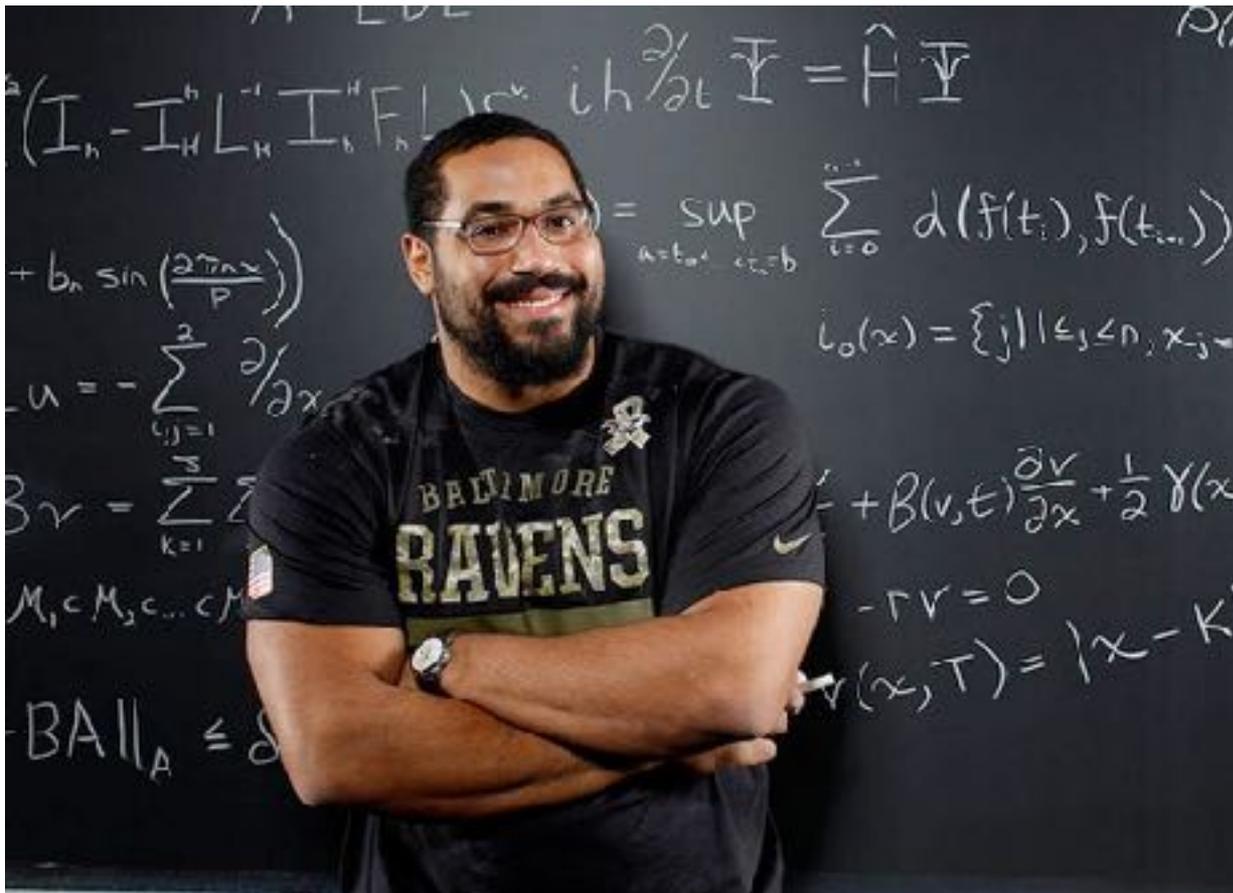
# MYTHS **VERSUS** FACTS



JORGE CHAM ©THE STANFORD DAILY

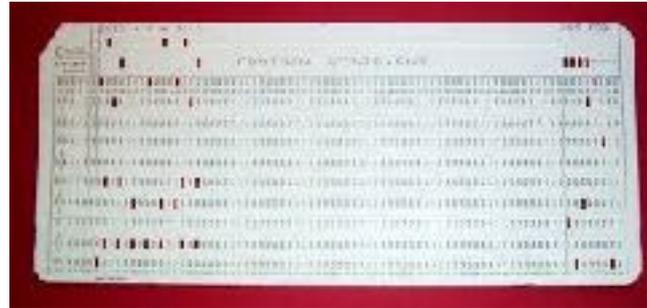
## Dispel or confirm stereotypes

Is the nerd or geek culture really true?



## Create realistic and complex characters

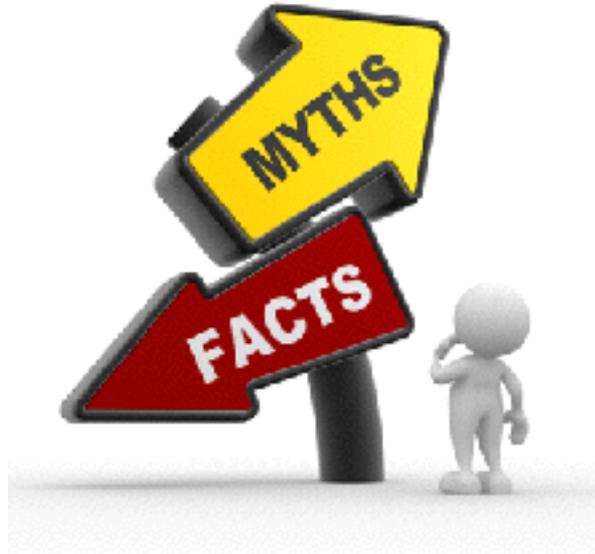
How to deepen the character profiles of heroes and heroines fall into the tech savvy category in personality and/or career.



```
int a[] = {5, 4, 3, 2, 1}; // 20 bytes
const int n = sizeof(a) / sizeof(int);
for (int i = 0; i < n; i++)
    cout << a[i] << ' ';
cout << '\n';
sort(a, n);
```

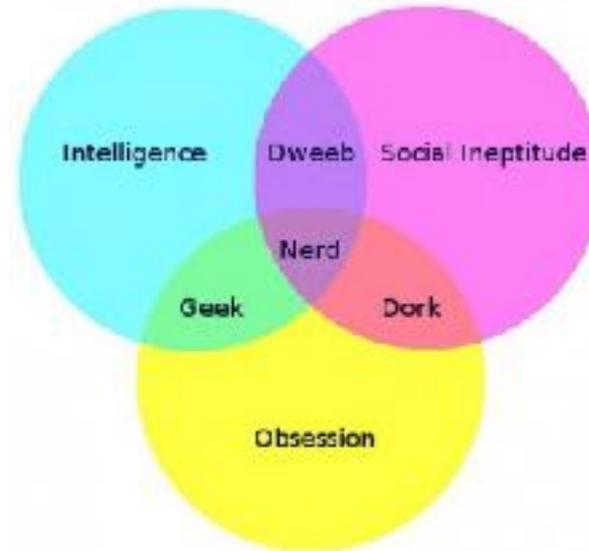
## Create Realistic Tech Scenarios

Computer careers and programming ain't like what they show on TV



# Dispel or confirm stereotypes

Often they're false, sometimes they're true!



## Geek vs Nerd

Do you know the difference? I didn't!

## Engineer Personality Types

Data shows interesting trends

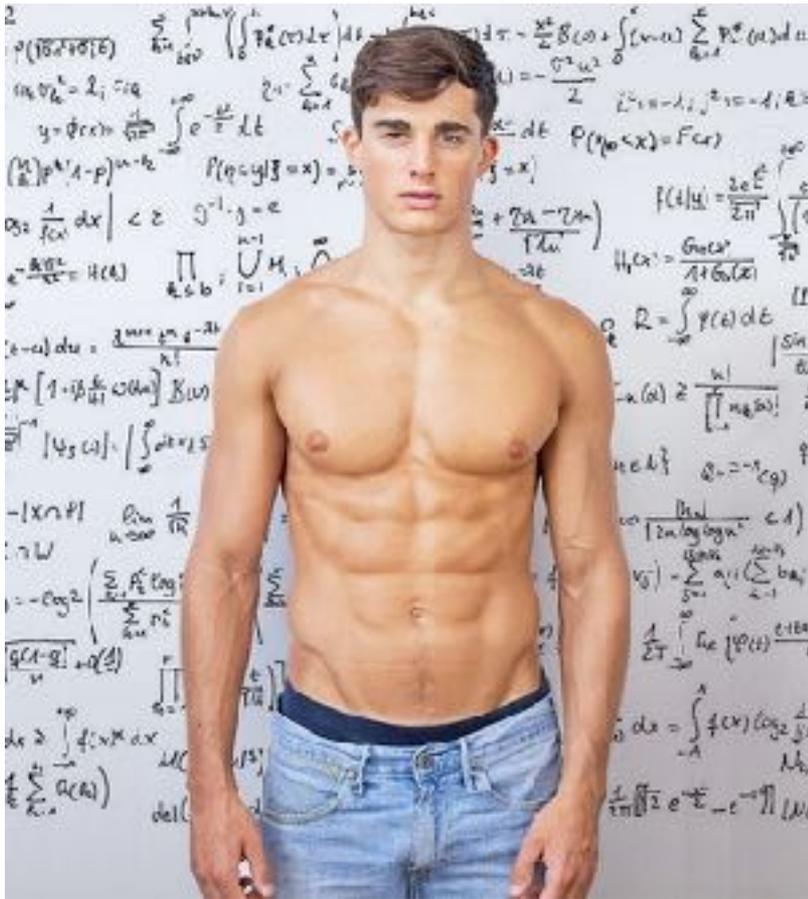
- ▶ Engineers come in all personalities
- ▶ Studies with Myers-Briggs have shown a high percentage (40%+) of engineering students are ISTJ which can show preference for:
  - ▶ I - Introverted
  - ▶ S - Sensing - practical and realistic
  - ▶ T - Thinking - logic, analysis, scientific
  - ▶ J - Judging - structure and order

MY FAVORITE KIND OF LUNCH IS...



## Myth or Fact: Social Awkward Loners?

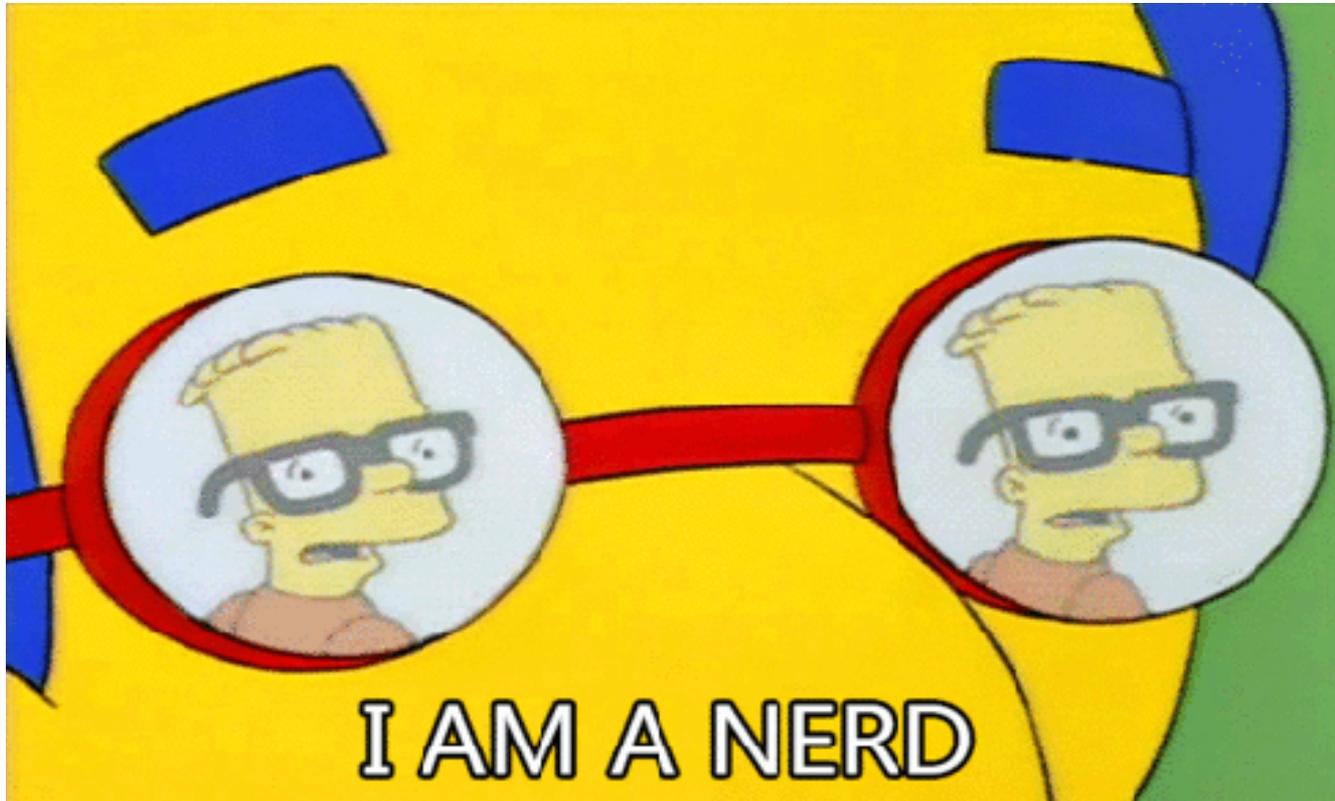
I say: both



Hi, I'm Pietro  
Boselli,  
Professor of  
Mechanical  
Engineering

Myth or fact? Not attractive

That's just silly



Myth or Fact? All of engineers wear glasses

Um...no

**DUNGEONS  
& DRAGONS**



Myth or Fact: into Sci-fi, gaming, cosplay, comic books, role-playing games

Seems kinda true but not always true





## Myth or Fact: truly tech geeks

Many are, and I would say, most are more tech savvy than the general population.



## Myth or Fact? Not athletic

Not true - this is one of my coworkers who is an Ultra Marathoner.

## United States

### Few Women Are Earning Degrees In STEM, Except In the Life Sciences<sup>10</sup>

Percentage of Degrees Earned by Women in Postsecondary Institutions  
(2014–2015)<sup>11</sup>

	Bachelor's	Master's	PhD
Biological and biomedical sciences	59.0%	57.3%	53.3%
Mathematics and statistics	43.0%	40.6%	27.9%
Physical sciences and science technologies	38.5%	37.5%	34.3%
Engineering and engineering technologies	18.7%	26.2%	23.2%
Computer and information sciences and support services	18.0%	30.4%	22.5%
All STEM fields <sup>12</sup>	35.1%	37.7%	34.4%

Myth or Fact: mostly guys

Fact!



# What can you do to stay away from clichés in your writing?

It's not wrong to use some stereotypes, but keep it fresh.



## Try not to typecast your characters

Or use one thing like weird love of comic books



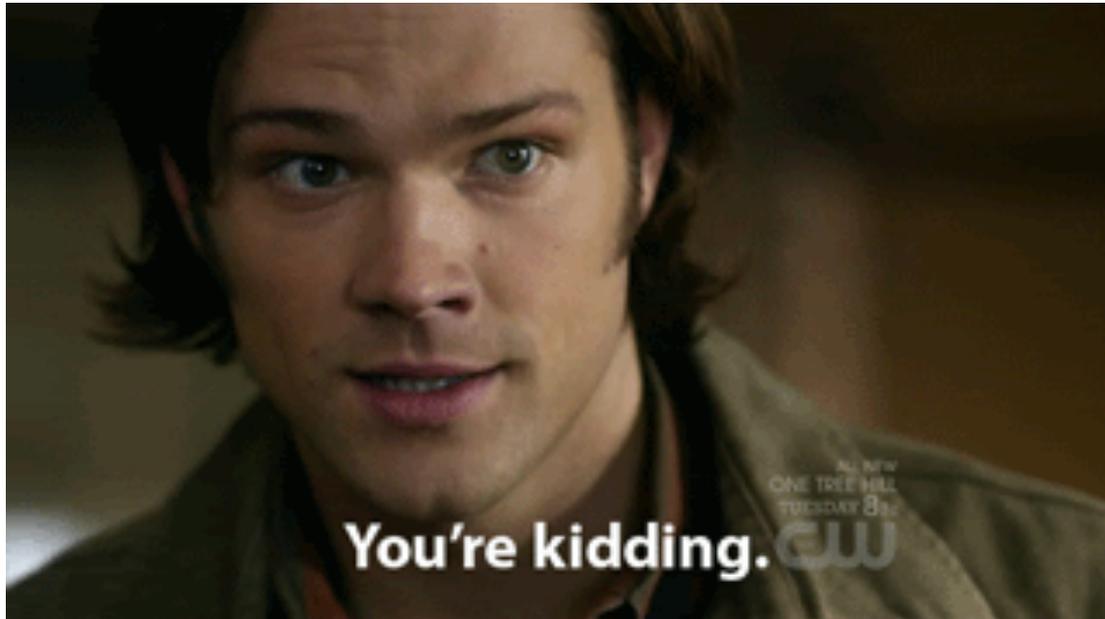
“

Don't ever *limit*  
yourself, or let anyone  
put you in a *box*.

”

## Subvert Expectations

Isis Anchalee is a software engineer at “Hustle” – board member of Women Who Code



## Ironic or Quirky won't save you

Only depth of character



## Research and apply characteristics lovingly

If your character loves comic books, well then, she could be the most renowned comic book expert in the country. Or maybe she is the school video game champion!



## Represent the work appropriately

No need to be Tom Clancy, but drop in some jargon and appropriate scenarios

# Create Realistic Tech Scenarios

Like...don't say "codes" instead of "code"

# What do software engineers really do?

- ▶ Design
- ▶ Meetings
- ▶ Writing Code (maybe only 40% of your work week!)
- ▶ Testing
- ▶ Deploying
- ▶ Support
- ▶ Fixing bugs
- ▶ Collaboration, Pairing



# What is code, really?

In computing, source **code** is any collection of computer instructions, possibly with comments, written using a human-readable **programming** language, usually as plain text. ...

The source **code** is often transformed by an assembler or compiler into binary machine **code** understood by the computer.

Writing code is called: programming

The result of thousands of lines of code is: **SOFTWARE!**

# Code Examples

```
program helloworld
  print *, "Hello world!"
end program helloworld
```

```
(print "Hello world")
```

```
#include <stdio.h>
```

```
int main(void)
```

```
{
```

```
    printf("hello, world\n");
```

```
}
```

```
class HelloWorldApp {
```

```
    public static void main(String[] args) {
```

```
        System.out.println("Hello World!"); // Prints the string to the
console.
```

```
    }
```

```
}
```

```
puts "Hello World!"
```

```
global _main
extern _printf

section .text
_main:
    push    message
    call   _printf
    add    esp, 4
    ret
message:
    db "Hello, World", 10, 0
```

```
IDENTIFICATION DIVISION.
```

```
PROGRAM-ID. hello-world.
```

```
PROCEDURE DIVISION.
```

```
    DISPLAY "Hello, world!"
```

```
    *
```

```
package main
```

```
import "fmt"
```

```
func main() {
```

```
    fmt.Println("Hello, World")
```

```
}
```

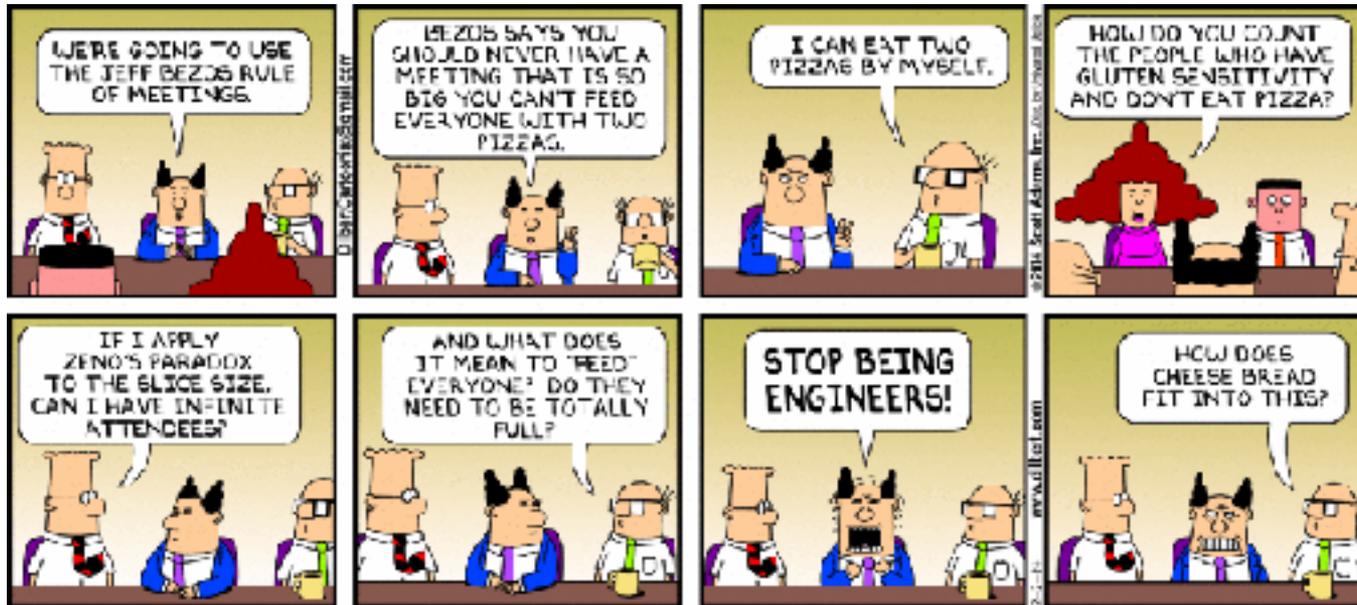
# Computer-y Jargon

Hack	Kludge	Ping	Foo	Coredump
Crash	Bug	Grock	Cruft	Zombie
Debug	Code	Backend/ Frontend	Agile	Refactor
Flaky	Broken	Brittle	Bulletproof	Dodgy
Kewl	Robust	Kernel panic	frd	tl;dr



# Representing the Work

- ▶ Code is written in a text editor
- ▶ Running code - you never watch code run. You might watch logs that are created as a result of code running. Code runs **TOO FAST** you to see.
- ▶ TV does a horrible job
- ▶ I'm still trying to decide about Silicon Valley (HBO)



## But have fun

I learned that some of the stereotypes can be true!!!!

# BONUS SLIDE: Computer Programming is like writing!

## Writing

- ▶ Artistic Endeavor
- ▶ Plotter or Pantser
- ▶ Goal Motivation Conflict
- ▶ Needs editing
- ▶ Critique Partners
- ▶ Deadlines
- ▶ Craft can be honed
- ▶ Easy to read
- ▶ Meets the goal in the best possible way

## Programming

