

Computer Science Department City College of San Francisco



Minutes/Notes from Industry Advisory Committee Meeting

Tuesday, May 22, 2018 | 6:30 – 8:30 p.m.

Batmale Hall room 451, Ocean/Phelan Campus

Attendees:

BZ Petroff, Internet Archive, Director of HR
Dave Mangot, SolarWinds Cloud, Head of Site Reliability Engineering
Adnan Chowdhury, Lattice, Software Engineer
Win Raguini, Masterclass, Staff Engineer, IOS
Dan Lopez, Dev Hut, Software Developer
Jason Hoang, Pivotal Ventures, DevOps Engineer
Carolyn Shek, City & County of SF, Community Development Specialist

Craig Persiko, CCSF CS Department Chair
Aaron Brick, CCSF CS Department Faculty
Grace Woo, CCSF CS Department Faculty
Jessica Masters, CCSF CS Department Faculty
Man Tam, CCSF CS Department Faculty
Steven Nelson, CCSF Employment Training Specialist

Raymond Chen, CCSF student
Kerrie Lu, CCSF student
Frederick Ly, CCSF student
Timothy Hastings, CCSF student
Jason Rosenberg, CCSF student
Karen Feng, CCSF student
Maribel Montejano, CCSF student and contractor

Summary of Common Themes and Action Items to Consider for CS Department:

- Remove Perl from Data Science certificate
- Remove C# from Web Application Programming certificate
- Offer a class in the programming language Go (commonly called Golang)
- Offer a class in Django and add to advanced programming section in Web App Programming
- Change Linux Admin curriculum to remove Kickstart and such, replacing it with cloud configuration admin
- Give students more experience working with cloud-based solutions such as Amazon Web Services and Google Cloud
- "Release Engineering" is a better name than DevOps for Build Automation and QA.

- Add more to DevOps curriculum. DevOps engineers need to be able to do performance tuning, cloud configuration, etc. Amazon or Google cloud - not so different. Security too.
- Update iPhone curriculum to replace MVC, cover more with API's and submitting to app store
- Offer Server Side JavaScript (Node.JS)
- Data Science curriculum should include discussion of Ethics, including algorithmic bias.
- Add Data Structures & Algorithms requirement to iPhone and Android certificates

Agenda / Minutes:

6:30 Mingle and have some pizza / snacks

6:45 Computer Science Department Overview

Results from last Advisory meeting, and update on status of CCSF CS

- CCSF is now free for SF residents, solidly accredited, and growing in enrollment
- CS curriculum includes Programming, Databases, Unix/Linux, and Gaming/Simulations
- CNIT is separate: Web (including HTML/Javascript), Networking, Windows, Tech Support.
- Visual Media Design covers: User Interface, Experience, and Graphic Design.
- In Computer Science:
 - We serve over 2,500 students each year.
 - We offer approximately 32 different courses each semester, for a total of approximately 85 sections.
 - We have 9 full-time faculty and 25 part-time faculty.
 - We plan to hire more part-time and full-time instructors in the coming year.
- In response to suggestions at past advisory meetings:
 - we have 3 new courses starting in Fall: Data Visualization, Technical Interview Prep, and Version Control & Code Repos (GitHub).
 - We've transformed our Computing Skills for Scientists certificate into Data Science Fundamentals
 - We added project / work experience requirements to most of our certificates
- A list of all the current and planned CCSF Certificates and their SLO's was handed out with the agenda.

6:50 Introductions

7:00 Courses and certificates

Do our curricula meet your organization's needs for entry level positions? What skills are missing?

Existing Certificates (details attached):

Programming & App Development: Java, C++, iPhone, Android, Web

Dave: Remove Perl. 2 big groups: Java or Go (as Perl substitute). So we should add Golang

Win: iPhone: trends (MVC is old. MVVM). Submitting to app store. Storyboards vs. programmatic use. API development. Graph AQL or RestAPIs

Dan: Yes and network APIs

Adnan: Web App Programming is fine as-is, but Server Side JavaScript (Node.JS) missing

Steve: Students needs API's, Linux, JavaScript

Jason: He's been told by Uber passengers that JQuery and AJAX are less important. Functional programming (React) getting more important

Aaron: We do have some functional programming in advanced Python

Adnan: sees some functional programming. Closure is one

Dave: Closure, etc. are more niche

Dan: Web App Programming could be split up

Dave: Web App Programming is all the same, whatever the language. Java backend is huge.

Adnan: C# not so web oriented

Dan: Django should be added to advanced programming in Web App Programming. SQL has staying power.

Project experience is key, everyone agrees.

Data Science Fundamentals

BZ: Looking at patterns in data, good math skills (the more math the better). Hadoop is important. Add introduction to Metadata. Librarians need to code now. Searchability. Ethics in Data Science are often missing (AI, etc). Algorithmic bias.

Dave: Data Science is really statistics + programming

Dave: Data Engineering positions always open: being able to manipulate high volume large data. Stream processing. Apache Kafka is default platform for high volume data

Jason and Dan: In programming interviews, students need to be able to answer why they solved a problem a certain way.

Dan: You should know why the frameworks are doing what they're doing

Build Automation for DevOps & QA

Dave: "Release Engineering" is a better name than DevOps for Build Automation and QA. It's a small part of DevOps. DevOps engineers need to be able to do performance tuning, cloud configuration, etc. Amazon or Google cloud - not so different. Security too.

Dan: Google cloud applications (Firebase) catching up to Amazon.

Database Certificates: Oracle, MySQL, SQL Server with C#

Dave: Click House is a good NoSQL data source. Amazon's Athena (proprietary implementation of open source Presto). You can run SQL queries against them. Data Lakes like these are huge. They are huge text files processed into a uniform format.

Dan: These are good. Demystify NoSQL a bit. Identify differences, pros/cons. Amazon Lambda - cloud functions, works well with NoSQL

Dave: Lambda is good for small things, related to databases or otherwise.

Dan: CRUD function: Create Read and Update Data

Dave: serverless development

Linux Administration: I, II

Dave: Kickstart is not really needed. Everything is on the cloud. Building virtual machine images is more relevant. Configuration management tools

Dan: Backend skills helpful for app developers: Amazon services. Firebase (backend service)

7:40 Proposed changes/additions to our certificates:

1) Do mobile app developers need a course in data structures & algorithms?

Yes there are jobs

Yes they need data structures & algorithms

2) Should we add more to our data science curriculum?

See above discussions

3) Proposed "Game and Simulation Programming" certificate:

- **Programming with Unity and C#**
- **Game Production Workflow**
- **Data Structures and Algorithms?**
- **Physics and Math?**

Adnan: independent developers have opportunities

BZ: game industry is brutal to employees

Kerrie: simulations with VR, AI, health industry, real estate, architecture, etc. IBM has expressed interest in this. Interactive design related to this.

Carolyn: Lots of venture capital money going into AR and VR. Many female developers in this space.

4) Embedded programming?

5) Internet of Things?

Adnan: ARM is taking off

8:20 Exploration of Ways to Get Involved with the Department

8:30 Adjourn

Comment received via e-mail:

----- Forwarded message -----

From: Deepa Mahalingam

Date: Mon, May 21, 2018 at 10:11 AM

Subject: Re: cs-fac: Agenda for Tuesday's Industry Advisory Meeting

To: "Craig A. Persiko" <craig.persiko@mail.ccsf.edu>

We must start teaching Golang. It's rapidly replacing systems written in C/C++.

My two cents.

Sincerely

Deepa

(Deepa Mahalingam is a new part-time instructor who will teach for us in Fall)