# Transcript: IT Podcast- Ep 87 - C964 Jim Ashe and DeNece Meyer

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Speaker #1 (Narrator):

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Speaker #2 (DeNece Meyer):

Hello everyone. This is DeNece Meyer, and I'm a Program Mentor from the BSCS program. Today I'm here with Jim Ashe, and we're going to discuss the capstone project for the computer science program. Are you out there, Jim?

Speaker #3 (Jim Ashe):

Yes I'm. Thank you again.

Speaker #2 (DeNece Meyer):

Thanks for joining me today. I have a few questions that my students have been asking me and I wanted to run them by you, so they get a perspective from instructor for this program and really have that reach for the start of this course. Do you have a few minutes?

Speaker #3 (Jim Ashe):

Absolutely.

Speaker #2 (DeNece Meyer):

Well, students asked me all the time what's the best approach for this course?

Speaker #3 (Jim Ashe):

Great question. First, I think like any WGU performance assessment, you need to understand what you really need to do, what problem you're actually trying to solve here. Steer away from the official learning resource on the course homepage. Perhaps because the open in this of the Capstone, the rubric can be a little difficult to follow, and it can be a little difficult to understand what you actually need to do. We have a great course instructor made Capstone website that has a step-by-step guide, what you do need to do and some intro videos. For those who have taken C951, the intro to AI course, recall a task 3, wrote about applying machine learning to a business problem in quotations. Here you're going to actually do it. Now, you're not a business major. The business aspects are not really the focus. They just provide a setting, a framework for the demonstration of your computer science skills and knowledge and the application for solving a problem.

Speaker #2 (DeNece Meyer):

That's very interesting. Another one goes along that line is, what do they need to consider for the topic for this project?

Speaker #3 (Jim Ashe):

Yeah, that's the big one. You got to pick something out, and it's up to you, take it out. To solve a problem with machine learning, and that's what you need to do here, you need data, you can't do anything without it. Start looking into many free data sets out there. But we have links on the website that I mentioned. Find something for a machine learning to answer, something for it to do and make that your business problem. There's always something in the data, and we can always frame that as a business problem. You can always do this if you find that and you find something to do with machine learning. Alternatively, you might have a preferred machine learning method maybe logistic regression or something in mind and you might look for data to fit it and then pick your problem. But the problem comes last, which is really backwards from task through 3. In real life in general, we usually have a problem, and we figure out how to solve it, but you've got to have that data.

Speaker #2 (DeNece Meyer):

That's a great point. It is a little bit backwards on solving it. But as far as that topic goes, do you have any examples or is there a topic list?

Speaker #3 (Jim Ashe):

Well, you got to come up with a topic. It's wide open. You're almost a graduate and now determining which problems to solve is the real crux of being a problem solver, and so we're asking more of you here. But we do have the SOC archive which Albia, those examples are above and beyond, but they do provide a good list, a collection of topics. You have your 951 Task 3, which you might not have data to do that and it might not be perfect to transition into a Capstone. Conceptually, it provides a very good starting point.

Speaker #2 (DeNece Meyer):

Well, do you have any examples that we can talk about here, just maybe apples and oranges or cats and dogs or something like that.

Speaker #3 (Jim Ashe):

Sure, yeah. Give me a data set.

Speaker #2 (DeNece Meyer):

I have cats and dogs.

Speaker #3 (Jim Ashe):

Well, let's say you have a bunch of pictures of cats and dogs, and you got to have those pictures. You know that these are all pictures of cats and these are all pictures of dogs. Well, you could take that data set and classify those image. You could use a machine learning library to create a model, which then can look at a picture and say this is a cat or this is a dog. It uses that existing data to make a mathematical model to say cat or dog. Then you give it a first new picture and it'll say cat or dog. That would be some image recognition application, very common application of machine learning. Now, how did we make that into a business problem? Let's just figure something out. I don't know. There's some cats and dogsols.com, sells their customers cat food and dog food and customers are uploading pictures of dogs and cats and they want to know what to market them. There you go. There's your business problems. We started out as an application and made up a business problem to fit it.

Speaker #2 (DeNece Meyer):

It might be a good fit for by via an adoption center or something that where you can do that example to each other. I think that's what comes to mind when you're setting up these different types of dogs or datasets.

Speaker #3 (Jim Ashe):

I like your business problem better. Helping cats and dogs rather than selling them stuff.

Speaker #2 (DeNece Meyer):

Yeah. What are some examples of timeframes that students have with this course? What should they expect start in this course as far as a time frame to complete it?

Speaker #3 (Jim Ashe):

Well, I think you might be better equipped than I, but before the end of the term, it actually a good one. It really does depend. Most of the work goes into coding part of the project. There is a writing part, but most of it goes in the coding part. We've seen some really nice projects that require like develop skills, the major parts of the project application, machine learning to a descriptive or non descriptive method is application. You really already existing highly developed libraries, but the coding typically is not that bad. A lot of that, if you've got those skills already, those coding skills, and I'll have you do. Good thing you already know Python from data structures and algorithms. Then the development depends on how complex really want the presentation to be. This might be a portfolio piece for your job resume. I think it would look very nice for that. Some students really do want to polish it out and go beyond the requirements. But this is not a software project. The projects that you present only needs to be something in the evaluators and run. When people need to get it done in less than six weeks, there is very doable path in order to get that done. For example, you might download that data set. You've got to use Pandas data frame to organize it. That might be one way to do it. Then you apply some ancient machine learning, like an example we just talked about with the dogs and cats to make a projection of some sort. Then you use that same library probably to generate some nice grass. Well now you've got a usable tool, probably written in Python. You can move it out over the Jupiter at an interactive widget and submit the notebook. That's the coding. That coding is an example of what could be the coding project. A lot of the skills I talked about students already have coming in, so it was a matter of putting those all together and getting that done. How much time you have, how much those skills are already developed, how good you are. But he's tough and picking up some new coding a lot of syntax skills at depends a lot on the students. But getting done less than four weeks is usually very doable.

Speaker #2 (DeNece Meyer):

Great. What about the writing for this project.

Speaker #3 (Jim Ashe):

Yeah, there's a lot for part 2. Unlike other, this is not primarily a writing project. The business stuff which is allowed the writing, but the writing also closes some technical stuff is typically maybe 15 pages and that might sound like a lot, but it follows a standard template and has a lot of redundancy. You write part of it in nontechnical terms for the executives and then you write partner with technical terms. Giving more explanation in details on why you chose a particular methods. A lot that's just window dressing for the work that you've already done. Once the code is done, the run is usually just a downhill sprint to the finish line.

Speaker #2 (DeNece Meyer):

Great. I know I talked to my students a lot when they're getting even a few classes before we start talking about that Capstone and getting it in their mind because I felt like one of the most challenging things for my students is to find that topic that they really feel like it's going to be. The second one is to narrow that topic down to a manageable course, which brings me to my next question. When is the best time for a student in this course to reach out to the course instructor for that first task?

Speaker #3 (Jim Ashe):

There's two times they might reach out to us. First, I'll talk about as easier is when you need approval, because we do have to sign that and you submit it and having our signature is necessary for that to pass. If it's done, just email it to us. If you think it's good to go, it probably is. We might send it back and asked for a few more details or something. This is usually just 1.5-2 pages. It's a summary given a blueprint of your plan. Neither is it written in stone, expected that you set out a proposal. Here's an idea, how are we going to do. When you invest a lot of time in the project, you're going to change some things. You're going to take maybe a different machine learning application than the one you wrote down. You maybe you wrote logistic regression. You choose random trees or something. I don't know but that's expected to happen. The main topic as long as that stays the same, it's going to be okay. It's just so we can say, hey, this is something that you're going to be able to make it to a passing projects. You don't spend four weeks going down the wrong path and then start over. That's the point of task 1. It's a lot less stressful than some people make it out to be. Certainly, if you're having trouble picking a topic, give us a call. Look through the resources and say, okay, well, I'm not quite sure so what I want to do, I have this idea but I'm not quite sure how I might develop it into a project that's going to fit the requirements, set up an appointment here to usually just 15-20 minutes, discussions, sorting out some details just to make sure you get started on the right path which is key.

Speaker #2 (DeNece Meyer):

Well, that gives a lot of insight to this course, and I really appreciate your time today. Thank you for coming to the podcasts with me. I hope everybody got some great information on Capstone. Thank you, Jim.

Speaker #3 (Jim Ashe):

All right, My pleasure. Those were great questions.

Speaker #1 (Narrator):

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