

Akin Engineer Interview

The world has many different types of engineers. When thinking of the type of engineer to interview, I could have chosen from mechanical, electrical or aeronautical or a computer based engineer very easily both professionally and personally. Eventually, I would like to share this interview with my students and thought that they might like to have a perspective of someone the class knows. This led me to interviewing my husband. Matthew Akin is a Senior Systems Engineer with the Platform Architecture Team, currently working for Fiserv with 17 years experience in the financial and banking field. He graduated Carroll College with a B.S in Computer Science with an emphasis on Networking and Web Design. What makes him an “expert problem solver” is his love for looking at all the details and then troubleshooting how to fix a problem. Sometimes this can take him over 24 hours working closely with others to solve an industry problem.

Due to the nature of his work, some questions I asked were unable to be answered or needed to be changed due to both client and industry protocol and security. The problem-solving technique used in this field includes algorithmic, heuristic and root cause analysis. When explaining this to my students more simply put as take good guess, apply a formula or specific steps and finding the main cause of the problem. It was interesting during the interview to find a similarity between the NASA Best Engineering practice and the way the company has laid out its infrastructure of: Plan, Build, Run. When you look at the Jonassen’s Theory of Problem Solving and compare it to his field, you would see that this field experiences logical, algorithmic, rule-using and decision -making problems. It is also evident that trouble shooting,

diagnosis-solution, case analysis and design problems apply to Mr. Akin's everyday job. After interviewing Mr. Akin, I found that most of his problems he used a trouble shooting or diagnosis-solution format. What is interesting to note is that even in the everyday work place, making mistakes is frowned upon, so our students are not learning ways to "think outside the box" because even engineers are being held to a strict guidelines on how to solve a problem. To solve problems in this field, one must consult other groups with people who have other skills. Showing this to our students would be a benefit because it would allow them to see that not just one person does a project or completes it on their own. Another takeaway from this interview would be that documenting and sharing how you came to a solution is very important.

- **Are you working in the field you went to school for? Did you have a large learning curve when entering the work force?**

Sort of, my emphasis was web and network design. I currently am working on design on the distributed system department as opposed to networking. I did not have a large learning curve when entering the workforce. However, I am constantly learning to keep current on skills.

- **Do you like solving problems? Why or why not?**

Yes, I like solving problems. I like the challenge of being able to figure out problems and being able to find a solution.

- **Did you like constructing or deconstructing items as a child?**

Yes, I liked doing both items. I was always building with Legos, Erector sets and outside items. I like to tinker with things like trying to make my bike faster.

- **Did your teachers growing up encourage an engineering process of brainstorming, researching, experimenting and then restructure?**

I would say for the most part no there was not many teachers who allowed us to use a process with refinement. I did have one teacher, who I think was an engineer, who allowed us to use a process.

- **Tell me about the most challenging engineering project that you have been involved with during the past year.**

I can't give you full details due company trade secrets. I had to architect a solution as part of an existing infrastructure without breaking the existing environment, but implementing critical audit requirements. My company uses a Plan, Build, Run structure. I work in the Plan department where more challenging projects get funneled.

- **What was a solution that you "inherited" that needed correcting or reengineered for a better solution to the problem? What would you have done differently if you were the policy maker?**

During audits and assessments, we ran into problems when the auditor did not know what standard applied to what system. This resulted in many additional questions about the applied standards and systems when being reviewed fell under the industry or federal requirements. Because of these different standards it made the audits more complex which wasted time and resources. As part of the work we did, we consolidated the standards for each system to use the most stringent standards which simplified future audit processes. Additionally, building the environments to a set common standard simplified the work of myself and other engineers as we built things in the environment. The simplification of the build process provided stability in the overall environment and alleviated additional questions. Building and putting new things in environment was faster and easier. From a policy making perspective, would not have had differentiating standards. Having a common standard allows for fewer man hours, fewer build hours, automation, better stability and better client satisfaction.

- **What advice do you have for teachers about teaching engineering to their students?**

Don't be rigid because in the engineering field you can't be book driven or rigid. Teach problem solving and being analytical. Can you look at something that is having problem, can you start with the "I know this problem", but I don't know what all the symptoms are. Like with a car, why is it making a noise? Why is the light not turning on, can I deviate from a given procedure and think outside the box? Having students explain how they got to the solution instead of just the solution. Document everything.

- **Give me an example of a time when you applied your ability to use analytical or problem-solving techniques to define problems or design solutions.**

When dealing with a third-party vendor product, the issue arose with hardware infrastructure that was expectantly rebooting. When troubleshooting the problem, I had to follow standard industry processes to isolate and troubleshoot the operating system to determine the cause of the issue. The issue was found to be with a third-party product and the way it was interacting with the operating system after a patch that was released by the vendor. The vendor refused to acknowledge the problem until I could replicate the problem on demand that triggered the conditions that resulted in the unexpected reboot of servers. The vendor acknowledged the bug on their end and pulled the offending patch until it fixed on their end.

- **What checks and balances do you use to make sure that you don't make mistakes?**

My company change management process involves someone from my team reviewing a change or process and then it goes from my team to the larger team which includes the planning, building and run departments (engineering department, the project build engineers, and operations department). After that

step it also goes into a larger change management process which checks the maintenance windows and no other changes conflict with my project.

- **Are mistakes correctable in your field? Is there one right way to solve a problem?**

Yes, mistakes are correctable. In my field, the desired outcome does not allow for the engineer to have a say much. There are many ways to solve a problem, it depends upon the scenario and parameters of the project. There may be many solutions, but the parameters are what dictate the solution. Sometimes we must negotiate with our clients on parameters to have a better solution.

- **What engineering skills have you developed or improved upon during the past year? What are you doing to stay current with the latest technology?**

From a technical aspect, I am always working on my skills. I am reading new articles about technology, various training course from vendors, reading and reviewing security blogs and technical writeups that could impact our environment.

- **Which software packages are you familiar with? What is the most interesting thing you know how to do with one of these packages?**

SCCM is one of the most used products in the environment I work in. It is used to build software deployment packages to manage software patch and configuration changes in the environment.

References

- Akin, R., & Akin, M. (2018, June/July). Engineering Questions [Personal interview].
- Jonassen, D. H. (2000). Toward a design theory of problem solving. *Educational Technology Research and Development*, 48(4), 63-85. doi:10.1007/bf02300500