

## From Batch Files to Breakthroughs: Dean Gadberry's Computer Science Aspirations

Dean Gadberry

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Career exploration is an important subject for any aspiring, young man. A fitting career is unmatched in the turbulent world which young men live in, today. Dean Gadberry enters the scene as a young man similar to many, although his inclination towards computers is abnormal. As he explores his careers, he will likely find that he is ideally suited for a career in Computer Science due to his exceptional ability to analyze and solve problems, his unwavering self-motivation, and that spark of enthusiasm-which often seems a flame-when he is allowed to innovate.

Dean became interested in his parents computer at a very young age, and took to online games and tinkering with search engines before he was 10. In fact, with YouTube on the rise, he was able to write his first computer program-a batch script keylogger-at 8 years old. By the time he was in High School, he was chomping at the bit, given the opportunity to participate in a computer programming course. The course, sadly, taught him nothing new. After his schooling days, he entered the workforce, and soon found himself writing code for a small business in Grapevine-helping develop the production database and online portal to the same written with Python, using the Django framework. Now, he appreciates the opportunity to share his passion for computers as he pursues a Computer Science Degree at NCTC and works as a Computer Programming Tutor with NCTC's Student Success department. Some would agree that Dean is working towards "both theoretical and practical perspectives" of software engineering, as Pressman attests is important for "ensuring a well-rounded skill set" (Pressman, 2009).

Dean considers, fondly, those who have influenced him in his pursuit of computer education. Taylor, a cousin, once told him that there was a difference between Java and JavaScript-both of which he studied upon his return home that night. Jeff gave Dean challenges to help him learn what to research and provided him with guidance while he was learning. Scott had long conversations about the depth of integrated programming. Scott was especially encouraging as Dean considered his life goals. And,

online, countless forum posters contributed to honing Dean's understanding of computers-often even guiding him through the troubleshooting process for various Linux issues.

Dean, then, must consider what he will do with a Computer Science Degree. He may find himself interested in a Web Development role. Here, he would rub shoulders with others who have gone down the same path as himself. These full-stack developers are able to code in many computer programming languages, including, but not limited to HTML, CSS, JavaScript, Ruby, Python, each of these with their own frameworks, and each company with their own standards. The ability to collaborate and develop iteratively, as emphasized in books such as 'The Mythical Man-Month', would be vital to a Web Developer's success (Brooks, 1995).

Dean may consider the opportunity to enter the Cyber Security field. As an analyst, he will need to familiarize himself with network protocols, high-level management, exploits, zero-days, scripting and architecture. As Bishop writes, "Understanding computer security requires a comprehensive approach, integrating both preventative measures and active defense strategies" (Bishop, 2003).

Dean could also consider a role similar to his friend, Scott-Integrated Software Development. The value of low-level programming would become very clear in a role such as this, as Dean would be writing C, C++, and Assembly. He would have the opportunity to write code for small vehicular computers, hand-held mobile devices, household appliances, and some industry-specific machines. This role is essential for the world of computers to spin. "Proficiency in C++ programming is crucial for developing efficient and effective software solutions" (Deitel & Deitel, 2011).

He actually does not need a degree to achieve any of these roles, however having one may place him above his competitors in a field that becomes more saturated with every new development in artificial intelligence.

Most of these Computer Science roles are similar in that the work is mundane. When Dean meets his goal, he will likely be asked to work a hybrid role-he will work from home on some days and in an office on others-as most of this work is done from a computer, except for the working on computers which are not one's own. All of these paths would require the attendance of daily meetings and mandatory trainings. Many companies in the DFW Metroplex have openings for senior developers in these roles.

Dean, as a Web Developer, would spend his days coding, testing, and integrating software into various devices and applications. He would work with company coding standards to complete Scrum Master expectations so that the team he works with can produce web applications for a client.

As a Cyber Security Analyst, Dean would monitor networks, analyze threats, write scripts for automated processes, and even interact with upper management of whichever company he might work for.

Integrated Software Development would be similar to the Web Developer role, although the hybrid role would include much more time in an office or in a lab. The difference, here, is that the software integration is done on small machines, and any change requires new, live, testing to provide quality assurance.

Moving into management will bring many changes, as Scott has shared with Dean. He will be expected to plan projects and coach his team. His job will shift to handling conflicts, creating reports, and providing guidance for the projects which he works on. He will be in meetings more than he will code, and his salary will reflect the changes in responsibility.

There is a lot of growth in this field, and Dean will find it as he navigates work culture and an evolving technological landscape. He's a shoe-in for management.

Management is not the only perk available. And yes, the pay is great. These roles require research-something which Dean is an absolute fan of. Every role, along with the work described, will expect Dean to spend company time and his free-time to better educate himself about the developments and pitfalls of his peers. He might read Hacker News with a coworker, or watch Fireship with his team. He will be have the opportunity to blog about his computer science career-a very common practice for industry professionals.

He will be encouraged to give back to the community through donating his time by working on Free and Open-Source software (FOSS). This is a fulfilling way to utilize his skills to develop goodwill around the world for underdeveloped nations and impoverished communities. FOSS opens the door for career advancement as well, as some companies will watch certain repositories and hire exceptional candidates.

Then, once Dean has some experience, and has managed a team, he might consider specializing in a niche field. Maybe it will come from his work, or maybe a FOSS project, but once he knows a language or framework better than 90 percent of his peers, he will be able to grow towards a senior management position. Truly, the opportunities for advancement are endless.

As exciting as this all is, however, there are some issues which need to be addressed. The job market for junior positions is not what it was in 2019. Since the COVID-19 lockdowns and vaccines ruined the nation of America, computer science students have had a difficult time finding work. 2023 kicked off with a round of layoffs in the biggest tech companies of the world. Thousands went out of work, and many have not found roles like the ones they had.

The necessity for learning and adaptation is fun and exciting, but it is a requirement. Any worker who fails to spend their own time figuring out how to invest in the industry gets left behind. Sure, they might not lose their job, but they will likely have difficulties advancing.

This pressure, and the general pressure to perform can really weigh on someone's mind. Deadlines are going to be abundant and unwavering. The competition will be enormous, and Dean's prospective coworkers will be the same kind of guys which he meets in his Computer Science classes-the awkward, overweight, and socially difficult. In general, the job is stressful for a variety of reasons.

Dean can handle a bit of stress though. In fact, he is likely already qualified for junior positions, and with a degree, he'll be well on his way to reaching his goal of full-time employment. His past experience with programming for Classy Closets in Grapevine was especially formative in shaping his desire to pursue a Computer Science Degree. Now, he is almost half-way done with the completion of that goal, as well.

Dean will need to continue networking, too. He already knows some wonderful individuals who are gainfully employed in the fields mentioned, but his network must expand to hiring managers and industry leaders. He will need to continue his private pursuits of educating himself about various computer science topics. "To be a hacker you have to get a basic thrill from solving problems, sharpening your skills, and exercising your intelligence. If you aren't the kind of person that feels this way naturally, you'll need to become one in order to make it as a hacker" (Raymond, 2001).

Dean has only a little more to go in regard to his general knowledge. He should stay involved with those campus activities which enable him to counsel others in their computer pursuits, and those which provide him an opportunity to lead his peers. He may find that continuing to encourage NCTC STEM Club participants demonstrate their skills in practical ways, to remind himself to do the same as he sets his mind on finishing his degree.

Dean Gadberry is on the right path, pursuing Computer Science. He has the skills, determination, and the taste for something new. Computer Science scratches his itch for people, and his love for technology. He will succeed in whatever company he pursues.

## References

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