IT Degree ROI: Which Majors Make the Biggest Salary?

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When you're in college, it's easy to put off thinking about your post-graduation job options. All the work involved in directing a college career can feel like a full-time job in and of itself, so who has time to pore over job listings and rewrite your resume?

While in school, the prospect of a post-graduation job and salary might seem more like a hazy assumption than a reality for most students. But it makes sense to put some real thought into the earning potential of any given degree.

Obviously, the major a student selects will have a big effect on that.

Ranking the Majors

The National Association of Colleges and Employers ranks the earning potential of computer science majors as follows (in descending order): computer programming, computer science, information science and systems, and computer systems analysis. Those rankings are current as of September and represent feedback from hundreds of universities and employers.

Bruce Mueller, chief people officer, instructor and executive director of the Career Management Center at the Illinois Institute of Technology, said these rankings hold true at IIT.

"Our experience is similar to those [rankings] based upon the job offers and starting salaries that the students are receiving in the computer field," he said.

Computer programming (or, put another way, code) has been dominant for a long time, Mueller said.

Because of this, "[companies] need software folks — people who know how to manipulate code, install applications or ERPs, customize applications and make different applications work better together," he said. "They need them to have machines work and, therefore, have applications work."

Computer science follows closely in terms of demand and salary potential, because the degree signals to employers that an individual is a broadly educated, well-rounded IT professional capable of taking on a variety of job roles.

The same doesn't necessarily hold true for information science and systems, however.

"It gets a little bit more specialized, where these are folks who will actually work in centers and know how to make disparate applications work together," Mueller said, adding that this skill is particularly useful in working in technical support. "That really is a growing industry."

After this comes computer systems analysis.

"These are people who will design work flows and talk about the needs of applications," Mueller said. "They do the front work and then work to make processes better. So, it's process improvement, and then when you bring a new piece of code in, it's how you make that work, teach people and redesign how work is done."

Engineering and Everything After

The salary that a degree is likely to earn can vary from company to company.

"If you're working for Google or Yahoo or a start-up, General Motors or even an insurance company, they all can pay a little bit different," said Jerry Houser, Ph.D., director of the California Institute of Technology's Career Development Center.

Houser added, however, that the going rates various IT majors earn are similar enough to draw some general conclusions.

Perhaps not surprisingly, the salary that a degree is likely to earn can vary from school to school, as well. A big factor here is whether the school's computer science department is in its engineering school.

"Computer science in some campuses is located in engineering, so kids have to make all the pre-engineering requirements to get in, and in some campuses it's not, so the math requirements are a lot different," said Phil Gardner, director of research for the Collegiate Employment Research Institute at Michigan State University.

MSU has IT students who are not in engineering, which has meant growth for its computer science department.

"Our booming programs — and I still consider these kids IT kids — are in our gaming program and in multimedia design," Gardner said. "The problem is they don't pay as much because they don't come out with that engineering certificate. And they may or may not be doing some really high-level programming."

He also said the highest-ranked IT majors at MSU in terms of salary potential are computer engineering, followed by software design, then programming.

"In computer engineering, they're actually designing hardware and doing the design stuff on the nuts and bolts of IT technology," Gardner said. "By far, the salaries for computer engineers are higher because there are so few of them. In the greater scheme of things, they're just harder to find. And so they come up on top, and then the design people writing and developing new software (and that would merge into gaming, depending on how good they are) would come in second."

In programming, Gardner said, salaries are all over the map because programmers can fill a variety of positions, from general programming to technological support.

"They get paid well, but in the pecking order it's still down there," he said.

IT design majors place after programming in salary potential.

"That's entry-level, and once you get out and establish your reputation and salary, everything just depends on your individual performance," Gardner said.

The dominance of computer engineering is a relatively new trend, one reflective of the increasing dominance of technology in society.

"The emergence of computer engineering, which wasn't even a field 10 years ago, has certainly put them out in front," Gardner said. "Michigan State has a program, but they only take 10 kids a year — they're highly selective, and every one of them walks out of here with $80,000, $90,000 a year."

Meanwhile, however, the diffusion of technology has allowed all kinds of majors to evolve into skills that revolve around technology.

"What happens is, as the technologies get adapted in other areas like communication, arts, media, English and so forth, these kids get adept and see that they can become IT people without having to go through engineering," Gardner said. "The gaming program's new, and the redesigning of all these multimedia-type design programs is new because kids demand that and sell themselves as communication experts. Companies will buy that kind of stuff. They don't have to pay them top dollar [like they do for]

a computer science degree from an engineering school, but they get the same type of stuff."

Strictly Business

John Estes is vice president of Robert Half Technology, an IT staffing firm. As such, he knows a great deal about what skills employers look for in hiring IT professionals, as well as what types of educational backgrounds within IT spark demand and, therefore, higher pay.

And Estes knows exactly what type of graduates he would tell computer science schools to produce.

"If I could talk to university administrators, I would tell them, 'You need to get your IT and computer science people blended with as much business education as you can get,'" Estes said. "If I could address a computer science class, I'd say, 'Take as many business electives as you can, because that's the way the world is going.'"

Robert Half's clients are telling the firm they want technical people who think like businesspeople and have business and project management skills. Estes said although most industry forecasters view this blend as the future of IT, demand for such hybridization is here now.

"When we get [staff] orders now, it's already started," Estes said. "[Clients] are wanting to know more about what projects this person has worked on, what their return on investment from this project is, and these are terms and phrases that you never heard back in the '90s. Back then, it was all about building a better mousetrap and all about infrastructure, and now it's all about business outcomes."

All of this, of course, has implications in terms of salary. Estes said IT students who integrate business training in their educations are likely to earn more.

"For the short term, when someone's just starting out, it would be more along the lines of heavy technical skills, but certainly in the long run, technical people with business education are going to come out on top," he said.

Probably the most direct way to integrate business skills with an IT education is to major in a business-oriented program and minor in IT. Computers now control everything, to such an extent that many business majors might amount to IT education anyway. Estes cited accounting as a good example.

"Years ago, accounting was accounting and was pretty much separate from IT," Estes said. "Nowadays, we get all types of requests for it, because companies want accountants to have a lot of IT experience. Sometimes, we even get orders for a particular individual, and it's hard to tell if [the client] wants an accounting person within IT or whether they want an IT person with some accounting. And, in fact, we're seeing a lot of

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accountants with something related to IT as a minor because they get out in the real world and realize they've got to use all these different types of developer tools and databases."

Universities recognize IT and business are gravitating toward each other, as well as the effect this is having on graduates' salaries.

"We're seeing that the accounting services and consulting field, as well as financial services and banking, tend to be your higher-paying segments as an industry," Mueller said.

Mueller spent 20 years as a corporate officer at Motorola and managing director for a global outsourcing company before working at IIT, and he advises students that having a minor in business will help them understand what the customer wants in servicing IT clients.

He also advises IT students to use minors to direct them toward a certain industry, if working in that industry is their goal.

"Obviously, a minor in business is wonderful, but if you have a specific area or industry that you want to work in, having a minor in that would really benefit you in getting the job in that industry," Mueller said.

This also has an effect on salary.

"Within the computer field, pharmaceutical companies tend to pay more, petroleum companies tend to pay more as an industry and aerospace tends to pay more as an industry," Mueller said.

Money Matters?

Of course, one question to ask in looking at what IT majors make the largest salaries is whether students even care. Not everyone selects their major based on the potential future salary. Just as often, this decision is made based on where an individual's passion, ability or interests lie, and a career is built from that.

Gardner said he is not sure students gravitate in a certain direction based on money.

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"The kids that [learn computer sciences] do it because they just love to do this kind of stuff," Gardner said. "For the ones that are in engineering, money comes with the territory. The other ones know that they're going to have to grind and knock it out, particularly if you're in gaming or media design, or you're doing Web sites."

Mueller echoed these sentiments.

"Money is important, but [the students] do it because they love it," he said. "For some students getting into the gaming business, they just like games. Or they like flows or design, and so they'll work on applications like that. It's more of a passion or interest, and they're hoping that money will follow. There's a payout for them, but it's one that supports their interest."

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