

Astrid Angevin: Part A

Introduction

Astrid Angevin was excited! She sat at a table looking at the job offer letter she received a few weeks earlier from The World Sentinel, one of the world's leading news publishers. She was an actual software engineer now. She reread the paragraph that said she'd be focusing on machine learning projects. She didn't know a lot about the publishing industry but she loved everything about artificial intelligence. She'd even earned a certificate in machine learning in addition to her Computer Science degree from her University. She just hadn't had the chance to apply it yet.

Astrid took the first job that came along after she graduated, an Administrative Assistant for a logistics company. She liked the work but simply wasn't able to do any serious programming. When she saw the advertisement for a software engineer with World Sentinel she jumped on it! She applied the same day, had an interview a week later, and received an offer letter not long after that.

As Astrid was thinking about how quickly things had changed, another new employee at the table turned to her and asked, "are you coming to the general staff meeting?" It was Govind Bhavé. Govind was a software engineer too and her first friend at the new company. They were going to be teammates. Astrid put the letter away and said, "Let's go!"

The Development Team

Astrid was thrilled to be part of an actual software engineering team. Including she and Govind, there were eleven people on the team, six programmers, four testers, one business analyst, and their manager, Rita Dunkeld. Astrid knew what the programmers and manager were supposed to do but she wasn't sure about the testers and business analyst. Thankfully, one of the first things Rita did was to explain it all.

The business analyst was responsible for translating the newspaper's technology needs into user requirements. The programmers were responsible for converting user requirements to software. The testers were responsible for writing automated programs to evaluate the software. And Rita was responsible for managing the project participants, schedule and costs.

Astrid was also excited about their work space. Instead of programming by themselves in cubicles or offices, Rita insisted on a large open-concept room that she called the "war room". When Astrid first walked inside she saw three long tables arranged in a u-shape. There were small tables with two or three chairs at them in each corner of the room as well but the main work area was the u-shaped table arrangement in the center. It seemed like it was going to be easy to work, easy to get help, easy to have meetings, and easy keep track of what others were doing. She wasn't wrong. Astrid really loved working in the war room.

As time went on, Astrid noticed that everyone naturally formed pairs based on their roles on the team. Astrid sat next to Govind with the other programmers forming their own pairs. The testers did the same. Even Rita and the business analyst sat together. It seemed strange at first but Astrid soon found out how convenient it was. She and Govind helped each other a lot. Astrid often set aside what she was doing to pair program with Govind. He did the same for her. Sometimes they

would pair program with the other people in the room too. As a result, Astrid came to know a lot about parts of the system that weren't her direct responsibility. They reviewed each other's code this way too. Astrid thought it was interesting that Rita didn't really have to give explicit instructions all the time. Everyone just seemed to do their jobs naturally.

Astrid also noticed that the programmers fed off of each other. Friendly rivalries developed between pairs. They were all becoming very good at turning out a lot of good quality code very quickly. Anytime they were tempted to take the rivalry too far, however, Rita was there to keep them focused. They had a business goal to achieve and Rita never let them forget it. As a result, they really respected her. Everyone knew that Rita was just as important to the project as any other member on the team.

In the end, Astrid and the team were able to roll out their first project on time and within budget. The new system allowed journalists to simply point their smartphone at a public figure and instantly see who it was, as well as a list of news stories they were mentioned in. As the machine learning subject expert, Astrid had played a pivotal role in the facial recognition component of the software. She and Govind had put their heart and soul into that part of the project.

As World Sentinel's journalists and other employees began to use the software they came to realize the advantage it gave them. It didn't matter if you missed an introduction or misplaced a briefing. As long as you could point your phone at a person you could instantly retrieve their name, position and the news associated with them. World Sentinel's writers seemed to be scooping rival papers more and more. At least some of that was due to the new software.

Rita, Astrid and Govind weren't just a bunch of "techy" unknowns at World Sentinel anymore. The board of directors knew their names. They knew what they could achieve.

Organizational Changes

With the success of the first machine learning project, many people on the senior management team wanted to use the technology in new ways. One of the managing editors wanted to use machine learning to analyze historical crime data. They might be able to predict trouble spots and get journalists there quicker. Another managing editor wanted to use machine learning to recognize fact claims like those made in political debates. Statements about economic or social issues could be evaluated almost instantly providing journalists with a leg up on other newspapers. Several other projects had also been proposed, each with their own proponent or group of supporters.

At first, Astrid, Govind and Rita viewed all the new work as a good thing. However, they soon changed their minds as senior management vied with one another for the money and resources to bring their own ideas to fruition. In the end, it was decided that the team responsible for the facial recognition software should be divided amongst the three most critical technology projects. Astrid, Govind, Rita and their co-workers were all placed on different teams and given offices in different locations in the building. The editors wanted them close at hand as their projects developed.

As it turns out, the new arrangement had several unforeseen consequences. One of the first was a growing tendency to treat code as individual property. Several developers began to grow protective and even jealous of their work. Rather than sharing they began to hide it from others, only submitting code for review when absolutely necessary. In some ways it was understandable. After all, this was the way senior management worked together. The spirit of internal competition fostered at World Sentinel was strong.

Despite the growing trend, Astrid, Govind and Rita remained friends. They often ate lunch together and lingered after work to catch up on what the others were doing. Astrid even had Govind and his family over for dinner. It was during this time that Astrid began to share her own opinions about the company's technology strategy with her friends. Astrid had enrolled in a graduate business degree program at a local university. As a result of her study, she had lots of thoughts about how to use technology at World Sentinel. Recognizing the value of her ideas, Govind asked if he could share them with his manager. Astrid agreed.

At some point Govind stopped asking Astrid for permission and continued using her ideas in conversations with his manager and director whose offices were nearby. It wasn't long before Astrid was left out altogether. Without even really being aware of it, Govind began to present her ideas as his own.

Govind felt uneasy in his new job but the ideas he shared with his boss seemed to garner a lot of respect. It wouldn't last forever though. He needed more. Govind decided to turn his attention to the other members of the original development team. Unfortunately, he couldn't strike up conversations with them quite as easily as he could with Astrid. As a result, he decided to install key logging and screen capture software on their computers. He enlisted a friend in technical support to help him. Eager for information, he even installed the software on his manager's and managing editor's computers. None of them knew.

Time went on. The new development teams completed their projects and started other ones. It was all just happening at a much slower pace. Technology projects at World Sentinel were almost always late and over budget now. At first Rita was worried but then just accepted it. Meeting up with Astrid in the hall one day Rita began to reminisce about the facial recognition project. "I guess the stars were aligned just right on that one," she said. Astrid agreed.

The quality of software at World Sentinel suffered too. It was buggy to say the least. Several quick maintenance releases were often required just to get the software to a stable, usable state. With the breakup of the original team, the original four testers each worked individually. They often wrote the tests for an entire product by themselves. Whatever the reason, many edge and special cases were not addressed.

After three years with World Sentinel, Astrid, Govind and Rita were still friends but their relationship had changed. When she allowed herself to think about it, Astrid felt sad.

A Falling Out

Astrid was naturally a very trusting person. As a result, she didn't seem to notice when Govind started pushing her for even more information than before. All of their conversations seemed to be about technology and business strategy. Truth be told, she enjoyed sharing what she was learning at school. All of that stopped, however, the day she walked into Govind's office and caught him red-handed.

It happened at about 10:00am on a Thursday morning. After attending the daily stand-up meeting, answer emails, and consulting with a team mate about a coding problem, Astrid went to refill her water bottle in the break room. She decided to make a small detour and see how Govind was doing on her way. As Astrid walked into Govind's office she noticed his computer monitor. It looked like Rita's desktop. She could tell because Rita used a family picture for her wallpaper.

Without thinking, Astrid pointed to the monitor and said, "that's Rita's desktop!" A sheepish look came over Govind's face. He closed the door and in a low voice explained, "Rita asked me to test some spyware she's using with her team. She's not sure everyone's working when they should be. I told her I wasn't sure about it but she asked me to do it anyway. So, I guess it works." Govind continued to explain the situation while Astrid listened. He finished by admitting they had installed it on all of Rita's employee's computers but no one knew.

When Govind was finished Astrid turned the conversation to other things. As they continued to talk, several curious incidents came flooding back to her mind. She remembered a conversation in which Govind had referred to the salaries of several key journalists at the newspaper. When she asked how he got the information Govind said one of the bureau chiefs left a printout on the photocopier. She also remembered the time one of their friends suspected someone was watching him through his computer. He scanned his machine several times but couldn't find evidence of any spyware to prove it. She also remembered the times she heard Govind repeat words or phrases she had used in other private conversations. It seemed weird when it happened but she never gave it any more thought.

With all of these experiences returning to her mind, Astrid wondered what she should do. She decided to shrug it off and continue on to the breakroom. Govind seemed satisfied with the conversation anyway. However, as she walked down the hall Astrid realized she couldn't let it go. Her decision seemed to be made for her when she walked into the breakroom. On the wall across from the water dispenser was a poster with the company's ethics hotline phone number and message urging employees to report all wrong doing. She took out the engineering notebook she always carried with her and wrote the number down. She knew what she had to do.

Later that night Astrid pulled her notebook out again. She picked up her phone and paused. What if Govind was telling the truth? What if Rita really was spying on her employees? What would happen to them? Would anything happen to her? All of these questions and more flooded her mind. Shaking her head to dispel her thoughts she dialed the number. Astrid knew what she saw. Whatever was really happening, using software to spy on fellow employees wasn't right. "Hello," she said, "I'd like to report an ethics violation."

Conclusion

It was almost four years to the day since Astrid started working at World Sentinel and three weeks after her call to the ethics hotline. Very little, if anything, seemed to change. Work went on as it always did. Her relationship with Govind also continued. She tried to distance herself from him but he kept showing up at her office to chat at the oddest times.

It was also the day she received the phone call from Paul Johnson. Paul was the head of security at World Sentinel. He wanted to interview her as part of an investigation he was conducting. Astrid was nervous. She knew that Paul worked at the FBI before coming to the newspaper. He was the real deal. All of the questions that came to her mind the night she called the ethics hotline resurfaced. Just like before, Astrid shook her head to clear her mind and replied, "Sure, I can come by your office today. How's 2 o'clock?"