



My Story in Computing with Marisa Midler

featuring Marisa Midler as Interviewed by Suzanne Miller

Welcome to the SEI Podcast Series, a production of the Carnegie Mellon University Software Engineering Institute. The SEI is a federally funded research and development center sponsored by the U.S. Department of Defense. A transcript of today's podcast is posted on the SEI website at sei.cmu.edu/podcasts.

Suzanne Miller: Welcome to the SEI Podcast Series, a production of Carnegie Mellon University's Software Engineering Institute. The SEI is a federally funded research and development center, operated by Carnegie Mellon University and sponsored by the U.S. Department of Defense. My name is [Suzanne Miller](#), I am a principal researcher here in the SEI [Software Solutions Division](#). I am here with [Marisa Midler](#) who is from the [SEI CERT Division](#). She is a cybersecurity engineer in that division.

This is our mini podcast series on the unique stories of how people got into the cybersecurity or software engineering discipline and came to work for us. These are always wonderfully interesting stories, which is why we do them, because not everybody who got here started out thinking in binary as we say in the software engineering field.

I want to welcome you, Marisa, and thank you very much for joining us for this podcast series.

Marisa Midler: Thanks for having me, Suzanne.

Suzanne: What is a cybersecurity engineer, cybersecurity researcher? Let us first let people know what it is that you do and give people an idea of what is a day-to-day schedule for you and what kinds of things do you get to do as part of this work?

Marisa: I don't really have a typical daily schedule, and my projects vary from month to month or even from week to week. I work on an assortment of projects. Like this past year, I published a [technical paper on ransomware](#) and then followed up with two [blog posts](#) that I wrote, and I also did a [podcast](#) with you.

Suzanne: Yes! We did.



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Marisa: Yes, and from the other side, I also do some technical work. Right now, I am working on some software engineering projects where I am making security tools to help people do various cybersecurity assessments. I actually work on one of the assessments. I do some remote [penetration tests](#), which is ethical hacking. So, we get permission from the customer and we get a set of rules where we can engage with their networks and just test them to try to find some vulnerabilities. What is really cool is the tool that I am working on to help these assessments, I actually get to use it for when I am doing the assessment.

Suzanne: So, you get to really span the gamut of working with customers directly, on the organizational aspects as well as actually doing software engineering and developing tools as you said and then using those tools in the settings. What is the most fun thing that you have done at the SEI, like, *This is the coolest thing ever?*

Marisa: That is a hard one because I actually really do enjoy the development side of the work, and I really enjoy doing the assessment side of work. I think it is really cool to do the actual operating portion of it and see how different people set up their networks. So, it is never the same. You never encounter the same type of network twice. But I would say that is pretty cool. It just gives you some additional insights into what the world actually looks like out there.

Suzanne: And without actually having to deal with some of the effects of that, right? Because I know one of the things that, in dealing with customers, you learn a lot about how different things work and you go, *Boy I am glad I do not have to live there every day*. But you get the best of both worlds in some ways by being able to see what is the variety of things out there.

Marisa: Yes, and I mean, it definitely keeps things spicy and interesting. I really enjoy the change of pace. I think that probably my favorite thing is just being able to work on all these different projects and not really be stuck supporting one type of legacy code, because I was a software engineer before I came to SEI and I was supporting some legacy code, which wasn't ideal for me.

Suzanne: There are some people for whom that is their favorite thing to do but most of us kind of like the newer stuff if we can get our hands on it.

Marisa: Yes.

Suzanne: Let's step back and look at how you got here and what are some of the interesting things that were along your path to come to the SEI, because I think that is what our viewers like to hear about is the different ways that we all ended up here. And so, where did you grow up?



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Are you the kind of kid who was walking around thinking in binary? I know I never was. Or did you take apart the toaster to see how it worked? I might have done that once, and who were the people that influenced your early life that led you here?

Marisa: I grew up outside Pittsburgh, about an hour outside the city in a small, rural town. I actually grew up on a farm. It was definitely a life experience. I am not a farmer but...

Suzanne: That was your first learning.

Marisa: It definitely taught me a lot. Yeah, I was not the kid who counted binary. I do not think I learned what binary was until *The Matrix* came out, and then I did not really actually understand what binary was until college. But I took things apart. My poor mother. She humored me and let me do this. I would say my parents are a big supporter of me. Just because I lived out in a rural area, so there were not a lot of people around, but I was around my family a lot. My parents and my older brother also was really technically inclined, and he would be one who built computers, and we would play video games together. So, I would watch him play video games, play with him sometimes. He would kill me all the time in the first-person shooter games. He is older than I am so like...

Suzanne: It is OK.

Marisa: Yes. But I would watch him build computers, and he would show me what different pieces of hardware he was putting into his desktop because he was trying to make it better, so he could play some computer games. So, I was really interested in technology and exposed to technology a lot from a young age. That was a really good influence, but ultimately, that did not direct me when I would go into undergrad. When I went to undergrad, I was actually undecided.

Suzanne: Many of us are.

Marisa: Yes. I went to the University of Pittsburgh when I was in for undergrad, and I was undecided for the first couple years. During my first semester, I actually was talking to my adviser about this, and I expressed an interest in switching into the engineering school, because I was enrolled in the arts and sciences school. I just was not finding anything that interested me and she was like, *Well, you know, try to take more classes because engineering is really hard and like, Are you sure you want to do this?* I mean, I was like 17–18 at the time, I was like, *Well no, I do not know if I really want to do this. It interests me but like this sounds like you do not think I can do it,* so I stayed in arts and sciences, and I was still undecided until my junior year.

Suzanne: What happened then?

Marisa: I still did not find anything in arts and sciences that really interested me. I was like, *Well, what can I finish in two years* because I just wanted to graduate at that point and I was like,



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Well, Communications sounds like it could be a handy skill to have. I am not a very good writer so maybe I will do English Writing and better my writing skills. So, I double majored in Communications and English Writing, and I did graduate on time. But yeah, I did a bachelor of arts in humanities.

Suzanne: One of the things I will say about that is many of us, I think, and actually probably even more my age, women especially, sometimes get discouraged from getting into the engineering field. The good news is that there is enough out there in the professional realm that you can actually catch up a lot if you have done some other kind of education and you really do have an interest in the technology area. The other thing that is kind of good news about that is if you had not done the communications and writing, you probably would not be as easy as you are in front of a camera. You would not have been as inclined to write those technical papers. The message I guess I want is, everything we do to educate ourselves is going to contribute to something in our lives. I know there are colleagues of mine that went straight engineering, and I hear all the time, *I wish I had taken more writing classes because I am just scared to death of writing a five-page paper for this journal that I am supposed to write for.* You have the advantage of like, *Oh, that part is easy, I just have to figure out what I am going to write about, and then I can go,* right? So that is a cool thing, I think.

Marisa: Oh, definitely.

Suzanne: Where did you get your technical education? I mean that had to have come...I know you went to graduate school, so tell us a little bit about that, because that seems like that was the transition into your technical area.

Marisa: That actually was not the transition into my...

Suzanne: It was not even yet? The dramatic arc continues. Go ahead, tell us about it.

Marisa: After I graduated with my bachelor of arts from the University of Pittsburgh, I really wanted to get out of Pennsylvania, so I moved to Seattle, with no job, nothing lined up, found somebody off Craigslist and rented a room. When I was there I was just like working various jobs, like I was just a bouncer at a nightclub for one of them, and...

Suzanne: OK, note to self: do not make Marisa mad.

Marisa: But it was really cool because it was also a music venue, so I got to see a lot of cool indie bands and shows during that time too. That wasn't really sustainable and I was like, *Well what am I doing?* I am making OK money, it is fine, but I wanted something more. I wanted something I could grow into and grow with. I started thinking maybe I will go revisit engineering and a technical field and go back to school, and ultimately that is what I did. I made a brief stop



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in San Diego, but then I moved back to Pittsburgh. I went back for my bachelor of science at Pitt in Information Science.

Suzanne: OK, so you sort of backtracked, you know... go slow to go fast. So you pulled back, got some of that basics and then what did you do in grad school?

Marisa: After I got my second bachelor's, I was working as a software engineer for a little bit and then I applied to grad school and I got accepted in CMU and I did the [Information Security Policy & Management](#) master's program at Heinz. And it is a mouthful I know, but yeah, so I was in CMU, I...through some of my classes, I met some of the staff at the SEI because they were faculty there. That is actually how I got my first internship is my first manager was one of the instructors for my class.

Suzanne: Yes, we picked up a few people that way, it is one of our secret secrets that is now out in the public. But no, our instructors are really good at finding people that have the right fit for the SEI, and that is a very cool aspect of our work is getting to bring people from the education world into the...into our real world. It is not the only real world but it is a very unique one. So, you were part of a [Scholarship for Service](#) program. Tell our viewers a little bit about that because that is the kind of program that people may not hear about often and may not even know that it is something that might be accessible to them.

Marisa: The Scholarship for Service program is a pretty great program. You can use it for either three years of undergraduate study or two years of master's degree study. Basically, if you are selected, the government will pay for your schooling, they will pay for your books, they will give you a living stipend for an apartment off campus or whatever you need. Basically, they will pick up the bill for your education and however many years that you do it. You then work for the government, the federal government, local government, tribal, or [federally funded research and development centers \[FFRDCs\]](#), yes, all these acronyms. But it also lets you work at a place like SEI and then you are also doing service to your country.

Suzanne: So OK, I am old, my registration fees, my tuition essentially, my freshman year were \$238 per quarter, so like \$700 a year. So, I actually was able to do my undergrad work without having a loan because education in that time was a lot cheaper. Probably would not even have thought about a scholarship like that. But in today's world, especially at a place like Carnegie Mellon or one of the top schools, that is a great program because you are talking about saving a lot of money that does not have to go into your school loans pile that almost everybody has to have these days. So, thank you for telling everybody about that.

So, you are in the world of computing professionals, and one of the things that many of us have experienced...I came out of my undergrad in the early '80s and I will tell you, at that time, I was



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the only female engineer when I first started working in a group of about 20. My observation is today, we have a lot less gender imbalance. But I am just curious in terms of your generation, what are you experiencing in relationship to that—has it become a non-issue?

Marisa: It is definitely not a non-issue. It can be challenging and frustrating at times, but ultimately it is getting better as more and more women are going into the engineering field. As that continues, hopefully this imbalance will equal out eventually. But ultimately, I think that if you are interested and passionate about engineering, and that is what you want to pursue, then you should definitely not let this stand in your way. You can succeed in this field. Life is too short to spend it doing something you do not like.

Suzanne: Exactly. Exactly. I think that one of the things that is common among a lot of the people that I interview on these My Stories is that detours are fine. You do not have to have your career set in stone when you are 23.

Marisa: No, not at all.

Suzanne: In today's world, getting experiences across multiple locations, multiple kinds of work, it just enriches your ability to deal with change. That is a lot about what our world is about, as all of us that are doing remote podcasts know, we used to do these in our studio, and now we are on Zoom doing these. That ability to be resilient in some ways is more important than what was your original bachelor's degree in. That is something that I think I see. You exemplify that, as well as some of our others.

What are some of the things that you are looking forward to in terms of telling people in the future? What advice have you gotten from others that you would want to pass on to our viewers and to other men and women who are figuring out, *Is tech for me or should I go do something else?*

Marisa: I would say the best little nugget of advice I got was from my dad actually, and it was always to just never settle. If you are interested in tech and you think that is what you want to pursue, even past your 20s and your 30s, even in your 40s. You can do this at any time. The time is going to pass anyways so you could spend four years trying to learn technology and getting that job or stay in the job that you are unhappy in. I would just say it is accessible. You can do it. But I would say you have to want to learn. Continuous learning is a big thing in this field. Everyone knows technology is continuously advancing. You see all these new gadgets every year. Well with those gadgets comes security for those gadgets every year, so you go to learn like the Internet of Things. If you are interested in it, you will do well as long as you want to learn and continue to learn about it.



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Suzanne: One of the things my dad said, *Four years, if you live to be 100, is only 4 percent of your life.*

Marisa: Yes.

Suzanne: When you start to think about it that way, I know that if you are looking at reeducating, you know, you decided I need a second bachelor's degree, that is daunting to a certain extent, to say, *I am going backwards, and I am going to have to spend more money to do this.* But in the long term as you said, it is going to make such a difference in your quality of life if you get to do work you enjoy. I am three, four years from retirement. I am at the other end of the scale. I am fortunate to look back and say, yes, there were some icky projects here and there, but I am happy that I took the step into tech because whatever challenges there were, I have done work that I love for the last 40 years. That is where you want to be, and I think that is where we all want to be.

Back on the subject of learning, I always like to ask this question of everybody: what do you read, what are you listening to, and how do you filter all this stuff coming at us? That is my biggest challenge is, how do I decide what book is going to be next or what podcast. I am actually starting to listen to podcasts, that took me a longer time than a lot of people. I have recorded podcasts for longer than I have been listening to them. How do you do that filtering for your learning?

Marisa: I think initially it is just using the network I have of people, people that I work with, like former people that I worked with who are also in security and just talking to them about what they are digesting. A set of books, a publisher I really like is [No Starch Press](#), because it has actual people doing the technical work in the field, writing books, and putting them out there. and the books are really engaging. Dry, technical books are not my thing. They kind of put me to sleep.

Suzanne: You are a Communications major. You know the difference.

Marisa: Exactly, but these ones are really good. I enjoy going through them. On top of that, for podcasts, I really like [Darknet Diaries by Jack Rhysider](#). Again, the storytelling aspect, he goes and tells different data breaches, he interviews different red teamers, so people who go out and they do the penetration test. They also do physical penetration tests.

Suzanne: I have heard some of those stories.

Marisa: Yes.

Suzanne: There was one of the speakers at the [DevSecOps Days](#) who was telling stories at our lunch-time session of how she would go in and basically breach physical security just by being



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this sort of innocent, *I do not know what I am looking for* kind of person. My jaw was on the floor at some of the things she got away with. She walked out with computers.

Marisa: Yes.

Suzanne: She actually walked out with computers. I am like, *How does that happen?* But yes, so there you go, you can also use your acting career as part of what brings you into tech.

Marisa: I mean, Twitter, everyone in the security industry is on Twitter so there are a lot of security researchers. I was looking into iPhone jailbreaking, and they had a recent hardware jailbreak last September [2019], I believe it was. The main guy working on the project, he did all his announcements for updates and everything on Twitter. So, Twitter is a good place to go.

Suzanne: Okay, I am a laggard there, that is one place I have not gone yet. But I do listen to podcasts now. I think I am going to have to find that. I like storytelling just like you said, so the podcasts that are more like that are interesting to me as well.

So, final question, we are all more than the sum of our resumes. You have been a farmer, even if you do not acknowledge it, you have done other things than just your tech stuff. What is some hobby or passion that you pursue when you are not doing all of this vulnerability tracking down kinds of stuff? What is something that is completely outside of that for you?

Marisa: I like being outside and active, so I like to take my dog on hikes. I have a rescue Pitbull; her name is Lexi.

Suzanne: Very nice.

Marisa: A couple years ago I took her to Maine and we were hiking mountains, and she is short and stout so she has like these little stubby legs, but I swear she is better at hiking than I am. She was climbing up these boulders like a pro. Other than that, I have been doing martial arts since my undergrad. I started doing judo as part of the Panther Judo Club at Pitt. Also, when I moved to Seattle, I got involved in [Brazilian jiu-jitsu](#). I've been training Brazilian jiu-jitsu off and on since 2014.

Suzanne: Cool.

Marisa: But yes...

Suzanne: Normal stuff, right? Just because you are a techie does not mean you do not do things like hiking and doing martial arts and listening to indie music and all those kinds of things. So, yes, excellent! I want to thank you for joining us today, and I want to applaud you on never settling.



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Marisa: Oh, thank you.

Suzanne: That is how we get people like you that can work for us and do the things that are important for protecting our security assets, both personally and more at a government level. I really do appreciate all of you, especially that are two generations behind me that are sticking with it and going for it because when I retire, I want to know that we are in good hands, and with folks like you, I know we are. So, thank you for that.

We will have a transcript of this, so the podcast and some of the publishing things [and links] that Marisa mentioned will be in the transcript if you did not catch them on the audio. If Marisa has any other book lists or anything like that she wants to put out, we will include that in the podcast transcript as well. But I want to thank all of our viewers for listening to this, My Story in Computing, and I hope that some of you are inspired by Marisa's story, and if you have been settling, that you will get over it and not settle. So that is our subtitle for this one, "never settle."

As always, if you have questions, please contact us at info@sei.cmu.edu. This podcast will be available lots of places that you get your podcasts, so you should not have to worry about where to find it, but you can always find them on the SEI website if nowhere else. Thank you very much.

Marisa: Thank you for having me.

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