Grace Lewis Outlines Vision for IEEE Computer Society Presidency

featuring Grace Lewis as Interviewed by Ipek Ozkaya

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Ipek Ozkaya: Welcome to the Carnegie Mellon University Software Engineering Institute Podcast Series. My name is Ipek Ozkaya, and I am the technical director of our group Engineering Intelligent Software Systems at the SEI. Today, it is my great honor to introduce my dear friend and colleague, Dr. Grace Lewis, a principal researcher at the Software Engineering Institute and the lead of our Tactical and AI-Enabled Systems Initiative. Grace was recently elected as the president of IEEE Computer Society for 2026. In today's podcast, we will discuss her plans to advance the field of computer science as IEEE Computer Society president in 2026 and president-elect for 2025. Grace, you have recorded so many wonderful podcasts at the SEI , but for those audiences who may not be familiar with those or your work, would you give a little background about yourself and the work you do at the SEI?

Grace Lewis: Oh, absolutely. Like you said, I lead a team here at the SEI called Tactical and AI-Enabled Systems, where we look at developing and transitioning practices for the engineering of both tactical systems as well as AI-enabled systems. I am also a principal researcher, like you said, and my research area for many years has been looking at emerging technologies and

how these change the way we engineer software systems. Currently, I am looking at how AI and ML, Artificial Intelligence and Machine Learning, are making us adapt the way we develop software systems, how requirements change, how design changes, how architecture changes, and, for example, testing. In particular, for this year, my focus has been on test and evaluation of machine learning systems.

Ipek: How about a couple of fun facts about yourself?

Grace: Ooh, fun facts about myself. I enjoy reading. I read between 20 and 30 books a year. I read a lot of science fiction and fantasy. That is my favorite genre. I also use scrapbooking techniques to develop greeting cards. I haven't been into a card store in many years. And family, family is a big thing. I have three adults now in my house, which is great.

Ipek: While you and I and a lot of our colleagues at the Software Engineering Institute and Carnegie Mellon University are very familiar with IEEE Computer Society again, not all of our audiences might be. Can you tell us a little bit about IEEE Computer Society, their work, how they advance computing, and how does this work in particular fit with the mission of the SEI?

Grace: Yes, sure. The Computer Society is the largest of 39 societies within IEEE. The focus of the Computer Society, not surprisingly, is computer science and technology. Their mission is to advance the practice of computing and technology but also to engage professionals in this advancement as well, so engaging professionals, whether they come from industry, from academia, from government, etcetera. To me, this is also very aligned with what the SEI does because software engineering is a big part of computing. In fact, one of the technical communities within the society is software engineering. If you look at the mission of the SEI, it really is about advancing the practice of software engineering. It almost seems like the two missions go together very well.

Ipek: And both organizations deal with similar challenges.

Grace: Oh, absolutely.

Ipek: This is actually a very, very well-aligned activity. Obviously, heartfelt congratulations on your very well-deserved election as the IEEE Computer Society President 2026. Could you please talk a little bit about your own history with the organization and why you felt that it was important to bring your experience to this important role?

Grace: Sure. I started volunteering with the Computer Society about 15 years ago. The Computer Society is split into five, I would say, they call them boards, but five areas of activities that they do to engage with professionals. Let me start with the ones I am not involved with, because it is easier. One is Publications, which you know very well as past editor-in-chief of *IEEE Software*. One is publications. The other is standards. The other is professional education and activities. There is also membership and geographic activities. And there is one called T &C, which is dear to my heart, which is technical activities and conferences. Usually, when people start volunteering for the society, they come in through one of these areas. For me, it was technical activities and conferences. I was elected member at large for the Technical Community on Software Engineering, not surprising. I started as a member at large. When you are elected member at large, you basically contribute to any activities that the community is doing. I was able to do some good work there. As I started learning about technical communities, I started to see how important it is to volunteer because volunteering is not only about giving back, but it is also about changing what could be better, what you don't think is right. So when I was approached by the vice-president of T&C, of the technical activities and conferences, to become a member at large for their executive committee, I am like, *Well, this is great, because then I will be able to see not only the technical community* **on** *software engineering but all of the 30, I believe right now 30 different communities that exist within the Computer Society*. From there, I was asked to be treasurer, so I became more of like, *Oh, let me see how finances work for this*. I started to learn about how the society functions, and in general, what it means to be a non-profit, not from the membership side, but from the leadership side. From there, I was asked to be vice president of T&C. Then I ran for second vice president, and I was thankfully elected. Then I ran for first vice president. Now I ran for president-elect last year, and here I am.

Ipek: Let's talk a little bit about volunteerism because our listeners might be thinking about this is great. For us it fits with the SEI mission, but why should our listeners be part of IEEE Computer Society? What are some of the ways they could get involved, and why it matters. You and I are long-time volunteers, so giving some insight to our audience would be good.

Grace: I am a lot about giving back. We are part of a community, a software engineering community. I feel like I have gotten a lot from being a part of the

community. It is a community that has seen me grow in my career, that has supported in my career, and it is time to give back. It is time to give back because I see all these people that are where I was 20, 25 years ago that are coming up. So one part of it is giving back, but I think the other part is growth. Before I started volunteering for the Computer Society, I didn't have a lot of experience in all the things that I have been talking about. *How do you lead a nonprofit? What does that mean? Being treasurer. How do finances work? How does that work? How do conferences finance themselves and all that?* I think it is a great opportunity for somebody that wants to grow in leadership. Maybe you are very technical, but you have this, *I wonder what it is to…*.So it is a very safe environment to start learning about leadership and start growing in that area. The third is what I said before. Societies aren't perfect; no company is perfect. If you can get to a position where you can say, *I think we should change this because the society would be better, the members would benefit better from this change*, or maybe it is like, *Look at this great thing that the society is doing. I want to put more into that because that is a great thing*. It is about giving back, it is about growth, and it is also about change.

Ipek: It is also about probably all the peoples you interact with and how you learn from all these individuals like yourself. People who are volunteering will be interacting with you and will learn a lot from both your technical expertise and your volunteering expertise in IEEE Computer Society.

Grace: Well, and it is not only that, but it is the amazing people that you get to work with, people that you have read their textbooks, and it is like, *Oh, we are on the same board together. That is great.* It is getting to grow your network and benefiting from that growth, but also people benefiting from it. For example, if I am organizing an activity, a conference, and I need a keynote speaker, I have so many people to choose from. But also, when they ask for a favor, you give back. My network has also increased greatly, which I think is great for anybody that is starting a career or continuing to grow their career.

Ipek: Exactly. Let's talk a little bit about your plans during your presidency. What strategic initiatives do you plan to implement once you assume office? Although it starts this year, so maybe you can talk about the progression of the roles.

Grace: The way the presidency works at the IEEE Computer Society, is that it is a three-year engagement. Like you said at the beginning, I am the 2025 president-elect, which means I was just elected. I am going to be president in 2026, and then I will be past president in 2027. Basically, in my first year, I

learn, and I build; in my second year, I execute; and in my third year, I mentor. Basically, you serve all the three roles. For those of you that followed my campaign, I was very big on a couple of issues. First is student chapters and early career professionals. We really need to have this pipeline, not only of volunteers, but just of people going in through our society, our activities, and all that stuff. Working with early career professionals and students, which are extremely active. Membership and geographic activities is the part of the society that looks at, well, at membership, but also at the student chapters. They are so great. They are full of energy, and I want to be able to take that energy all the way through becoming president, like make sure that all these people grow in their careers and eventually become the leaders of the society. Increasing industry participation is also very important for me. The society is still not very academic, but its membership, a large percentage is academia. I would like to engage more with industry professionals because the two have so much, so much to learn from, and it would be great to have that. Creating better paths for emerging technologies is also important. I want to make sure that the technical communities remain up to date with all the changes that are happening and have an easy path for people to propose activities, like to bring emerging technologies into the society.

Ipek: That is such a strength for you. That is like your passion and strength with the work that you have done.

Grace: It is. It is. A pipeline for the volunteer base…Like with any society that relies on volunteers, sometimes it is difficult because people have very busy careers, very busy lives. But I can tell you that you can manage. You can manage to find some time to volunteer because it is very important to give back. But creating that volunteer pipeline so that people are motivated to volunteer and being able to recruit good people, to keep them engaged, to recognize what they do, that, to me, is very important.

Transparency of goals and activities I think is also important, especially for a non-profit organization. Our current past president started a series of webinars where it focused on *What does T&C do?* *What does Publications do?* I think that is very important because as people get to know how the society functions, maybe they feel more engaged and compelled to volunteer. That is also important.

Also, value, I want people to see *What is the value?*, and make sure that that is really very, very clearly stated. I am a member of the Computer Society because it gives me this value. Basically, those are my points.

Ipek: The transparency is actually very exciting because it allows people to also identify how their own professional goals might overlap. That is why maybe it is not an added time, but it is actually a win-win where they are using something that also advances their existing goals rather than adding time to that. So that is excellent. I am excited to see these as you unroll them.

We know that the computer science careers are very critical. The need is increasing, but also with each emerging technology, it goes through a shift. There is a decline that a number of areas globally are seeing in enrollment in computer-related careers. You talked a little bit about student chapters and all that, but what are some of the other existing or new initiatives to bring new professionals to computer science careers? What is the role that IEEE Computer Society can play in that?

Grace: One of the main activities that the society is working on this year with its current president is creating a stronger link between student chapters and local chapters. Because when students develop their chapters within the university, they are very active. What happens sometimes is that we lose those members because they are very active as students, but they don't see, *Okay, I graduated [from] my student chapter. Where do I go next?* It is creating the links between the student chapters and the local chapters. And so, for example, when the local chapters have events, the students are invited to become that and to start growing their network because, for them, as they start their careers, that is very important. That is an example of what some of the activities that the society is doing at the membership-and-geographic-activities level to make sure that those very enthusiastic students continue their careers as industry, academia, government, wherever they are going, and bring that energy with them. So that is an example of activity.

Ipek: Yes, especially like if you move from Pittsburgh to Chicago, you still know that Chicago local chapter is to your service as well, so those are actually great initiatives. Well, Grace, I cannot let you go without talking about the current work you are doing, although you mentioned it a little bit. What are some of the things that are exciting going on in your work, and what are you working on? What might be some of the things that the audience might be interested in from that perspective?

Grace: We just started a project called Continuum. That is where all my research energy is going into these days. Continuum is looking to establish a better practice of test and evaluation for machine learning capabilities. What we see in practice is that people don't really know how to test machine learning capabilities yet, even though machine learning has been around for

a while now. This project is building on a past project called MLTE [Machine Learning Test and Evaluation], where we created a process and a tool set that helps in two ways. It helps developers of machine learning models better design and test their models because it forces model developers to think beyond just accuracy. I just have to build my accurate model in that very narrow point of view and to say, *Okay, I need to understand how this machine learning model fits within the larger system, and what are those requirements that the system is placing on my development?* It is forcing model developers to really think about that. What happens in the end, if you bring the system context in, is that most likely, when you feel that model is going to be more relevant because you know the system context, you know the operational context. That is the part that builds on MLTE. But also, especially within the DoD [Department of Defense], there are test and evaluation organizations that do different type of testing along the way. And so, Continuum is also looking to extend MLTE, that tool set, that process, to generate data and evidence that test and evaluation organizations can use to say, *Okay, this part was tested. I really need to focus on this part*. Or they can say, "*Because now test cases, because that's an important part of MLTE, are a first-class artifact, I can bring those test cases and the test code, and I can repeat it. I can extend them*. But basically, it is to create more integration between the different testing organizations within the Department of Defense.

Ipek: To give some hints to our listeners, MLTE, Machine Learning Test and Evaluation tool is open source. It is available from our website. Some organizations are starting to play around with it. I know the team would love to hear feedback if the audience is willing to try it out. There is information about that as well.

Well, Grace, this, as always, has been a pleasure. Thank you so much for your time with us. Congratulations again in this new role. We know great things will come out during this. The IEEE Computer Society has been supporting the software engineering and computer professionals. With your leadership, we are looking forward to some of the new initiatives.

For our audience, we will include links in the transcript to resources mentioned during our conversation. Finally, a reminder to our audience that all our podcasts are available on SoundCloud, Spotify, and Apple podcasts, and the SEI's YouTube channel. If you like what you see and hear today, please do give us a thumbs up. Thanks again for joining us and looking forward to your feedback.

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