

The importance of professional development (and how to do it!)

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Why is it important to continuously develop both technical and soft skills?

Success in any technical field isn't just about what you know; it's about how you apply it, communicate it, and collaborate with others. Professional development means investing in both your technical mastery and your human skills, growing not just as a scientist or engineer, but as a communicator, collaborator, and leader in your field. While technical skills may get you in the door, soft skills are what help you climb the ladder.

- Technical skills are your foundation — they demonstrate your ability to perform the core functions of your role.
- Soft skills — like communication, leadership, adaptability, and emotional intelligence — are what enable you to work effectively with others, lead teams, and grow into new roles.
- Interestingly, soft skills can also enhance your technical abilities. For example, teaching or presenting a concept to someone else (a soft skill) often deepens your own understanding (a technical gain).

How do you stay current in your field?

Staying up to date is essential in a fast-evolving world. Here are some practical ways to do it:

Read industry publications

- Subscribe to journals, blogs, or newsletters in your field.
- Example: Follow SPIE journals, arXiv, MIT Technology Review, or Nature Photonics.

Attend conferences and workshops

- Participate in both technical and professional development sessions.
- Network with peers, attend plenary talks, and explore market trends.

Adopt a life-long learning mindset

- Stay curious. Take online courses (e.g., Coursera, edX, LinkedIn Learning, SPIE short courses).
- Political shifts have many downstream effects on the supply chain and pricing in the market. Stay up to date with what is happening in the global economy and industry. This is an example of things you may not be taught in school, but are critical to understanding industry landscapes.
- Keep an eye on company mergers and emerging trends.
- Consider aligning your learning goals to the job you want to have in 5 or 10 years and not the job you necessarily already have.

Reflect on your career

- Regularly assess your strengths, gaps, and aspirations. These things change over time, so you shouldn't just do this activity once and consider it done! Set calendar reminders every 6 months to a year to revisit these goals.
- Journaling or career mapping can help, or hire a career coach to guide you. There are also many free online tools for career SWOT analysis: "strengths, weaknesses, opportunities, and threats."
- After you assess your current toolbox of technical and non-technical skills, be sure to update your LinkedIn profile and resume!

Seek mentors

- Find people who inspire you and ask for guidance.
- Mentors can offer perspective, feedback, and opportunities.
- Remember, there is no “one-size fits all” mentor. Seek to have a mentor for each phase of your life/ career. For example, find a mentor who can help you navigate where you are now in your career, as well as a mentor who is already in the job you hope to have in 5 or 10 years, so they can help you get there.
- It is also helpful to have a mentor for complex life situations to navigate — for example, immigrating to a new country for work or starting a family while being successful in your career.

Engage in conversations

- Talk to colleagues, students, or professionals in other fields. These discussions often spark new ideas or insights.
- How do you do this?
 - Be curious - ask curious questions to learn more. You never know what you might take away from a conversation, even if it doesn't seem to be directly relevant to your career path.
 - Listen more than you share. Again, you never know what you might learn from someone if you give them space to share their experience; it makes them feel like you really care.

How do you actively grow and maintain your professional network?

Building a strong network is more than just collecting contacts; it's about cultivating relationships.

Stay active on LinkedIn

- Post updates about events, courses, or certifications.
- Share articles, ask questions, or comment on others' posts to stay visible and engaged.

Join professional organizations

- These offer access to exclusive events, job boards, and mentorship programs.
- Example: SPIE, IEEE, ACM, ASME, or local industry groups.

Get involved in the community

- Volunteer, speak at events, or mentor others.
- This builds your reputation and expands your reach.

Follow up after meeting someone

- Send a quick message or email to thank them and keep the conversation going.
- Pro-tip: Mention something specific you discussed to make it personal.

Keep notes on contacts

- Use a tool like a spreadsheet or notes on business cards to track how you met people and what you discussed.
- This helps you reconnect meaningfully later.

Meet new people at conferences

- Don't just attend sessions, join social events, poster sessions, or coffee breaks.
- Ask open-ended questions like, “What brought you to this event?” or “What do you hope to learn while you are here?”

What are some underrated or unconventional ways to pursue professional development?

Sometimes the best growth comes from unexpected places:

Explore outside your field

- Take a class or read a book in a completely different area.
- Listen to scientific or industry-related podcasts while you are commuting or doing chores.
- Example: A mechanical engineer taking a psychology course might gain insights into team dynamics or user-centered design.

Make yourself uncomfortable

- Growth often happens outside your comfort zone.
- Example: Volunteer to give a guest lecture or lead an outreach event.

Seek out role models

- Identify people doing what you aspire to do and learn from their paths.
- Ask for informational interviews or shadow them if possible.

Have coffee chats

- These informal conversations can lead to mentorship, collaboration, or new ideas.
- Reach out to alumni, colleagues, or even people you admire on LinkedIn.

What is an unexpected skill you've gained that helped you more than you anticipated?

Sometimes hobbies or side roles lead to surprising professional benefits:

- **Photography** > Learned photo editing > Created high-quality figures for academic papers.
- **College tour guide** > Gained public speaking confidence > Sparked a passion for teaching.
- **Student organization involvement** > Developed leadership skills > Prepared for a business development role.
- **Team leadership** > Improved communication > Led to international conference presentations and mentorship opportunities.
- **Software engineering** > Solved complex problems in unrelated fields > Became a cross-disciplinary asset.
- **Volunteering at conference booths** > Honed marketing and pitching skills > Boosted communication effectiveness.

The bottom line

Once you finish school and enter the working world, it can feel like your days of learning are over. But education doesn't really stop. After college, it's up to you to take the initiative to keep building your technical and professional skills, rather than relying on a set curriculum. The good news is that you now have the freedom to choose what to focus on — whether that's deepening your expertise in your field or spending more time developing essential non-technical skills that will support your career. The challenge is pushing yourself to really own your personal development. (Volunteering at an SPIE conference or participating in Society Governance is a great place to start!)

But remember: Life is a marathon, not a sprint. Find a working pace that feels right for you, and be sure to always prioritize your overall well-being!