

Privacy Engineers on the Front Line: Bridging Technical and Managerial Skills

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School of Information Sciences

The Power of Information

Outline

- Overview of the Study
 - Research Objectives
 - Methodology
- Survey and Interview Results
 - Roles & Skills
 - Challenges
 - Implications
 - Opportunities



Research Goals and Methodology

Research Goals:

- What backgrounds, roles, and skills do Privacy Engineers (PEs) have?
- What challenges do PEs encounter?
- What are the opportunities for PEs?

Survey: 17 participants

Interviews: 18 participants

Recruitment:

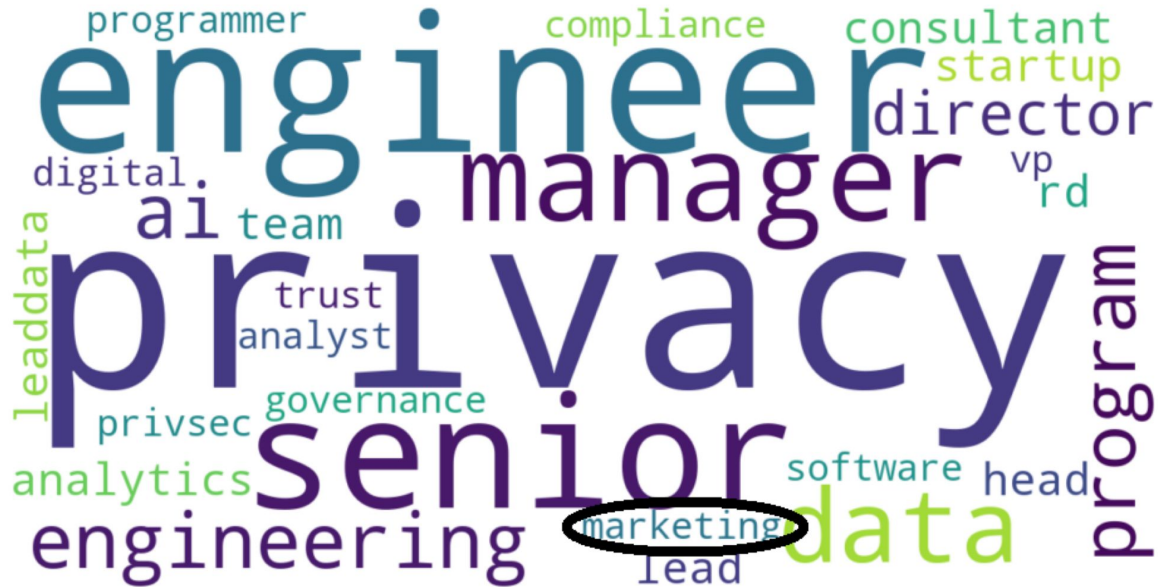
LinkedIn, Slack, List-serv, snowball

min. 2 years of experience, working in the USA



Privacy Engineer Job Titles and Departments

All Job Titles

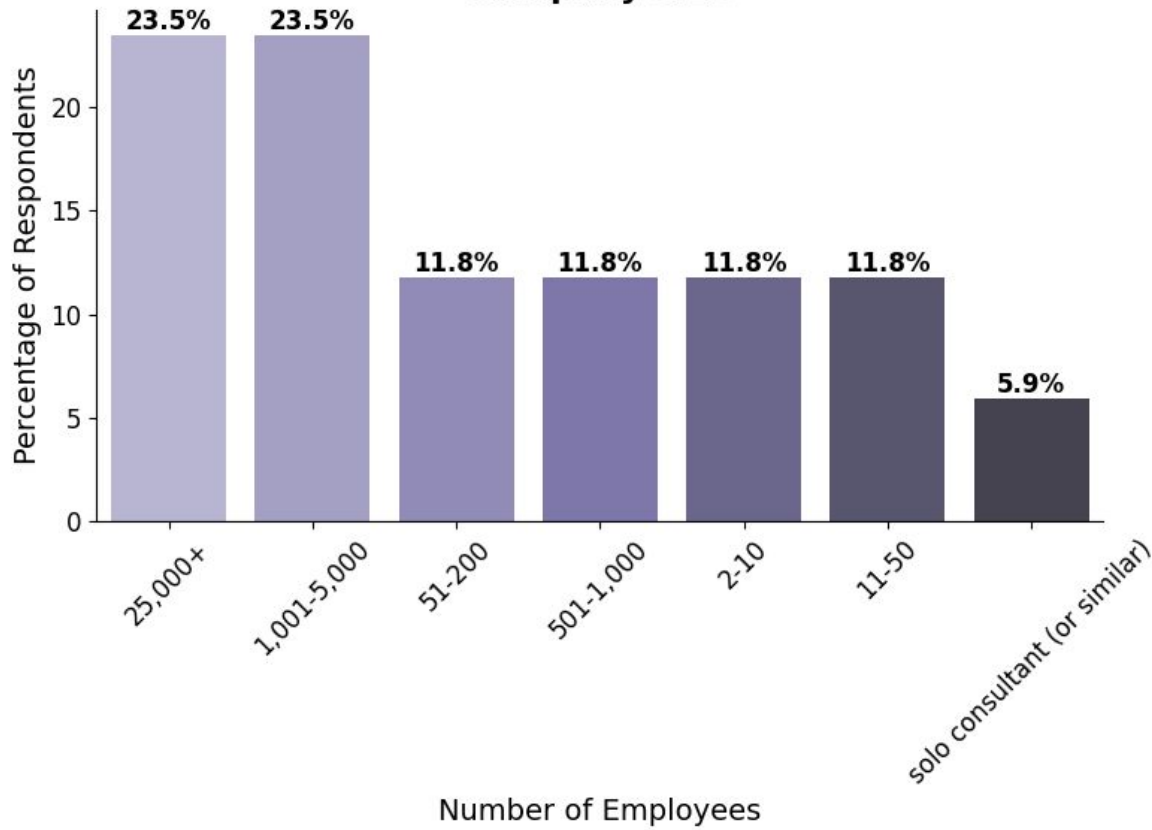


Privacy Engineering Departments Word Cloud

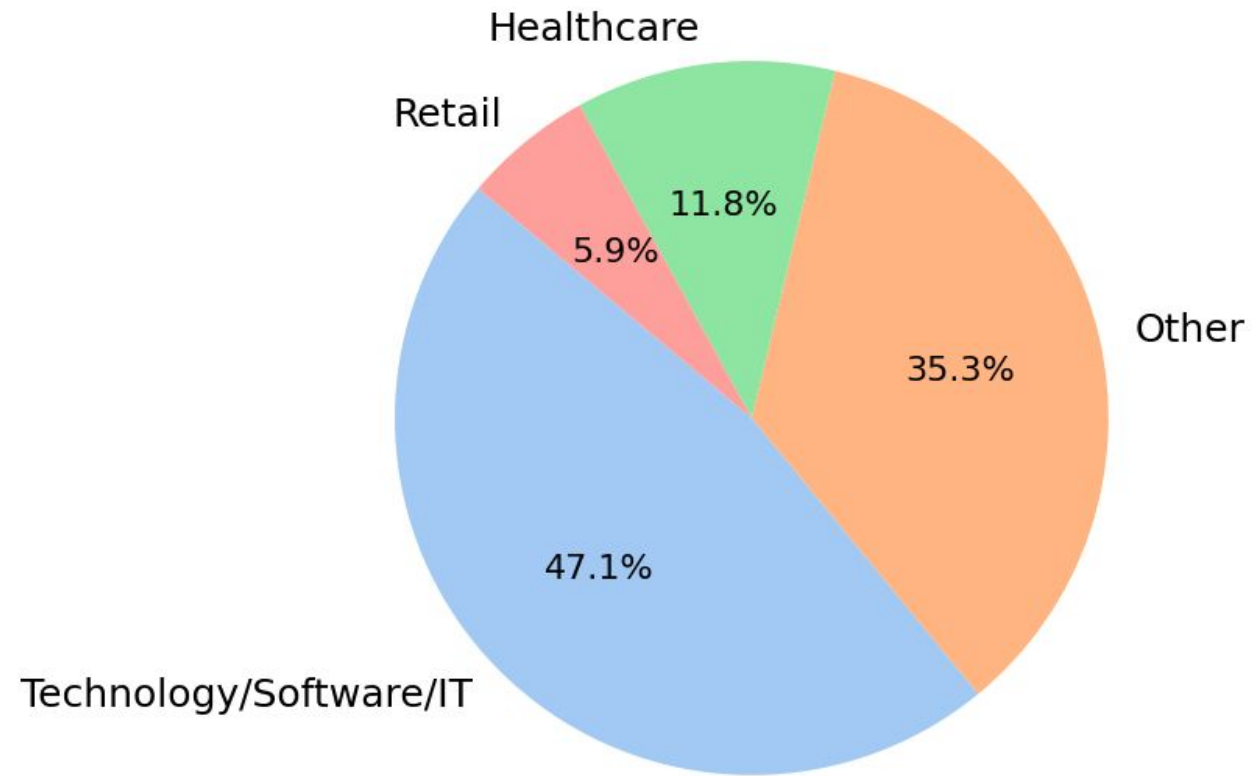


Where do PEs Work?

Company Size

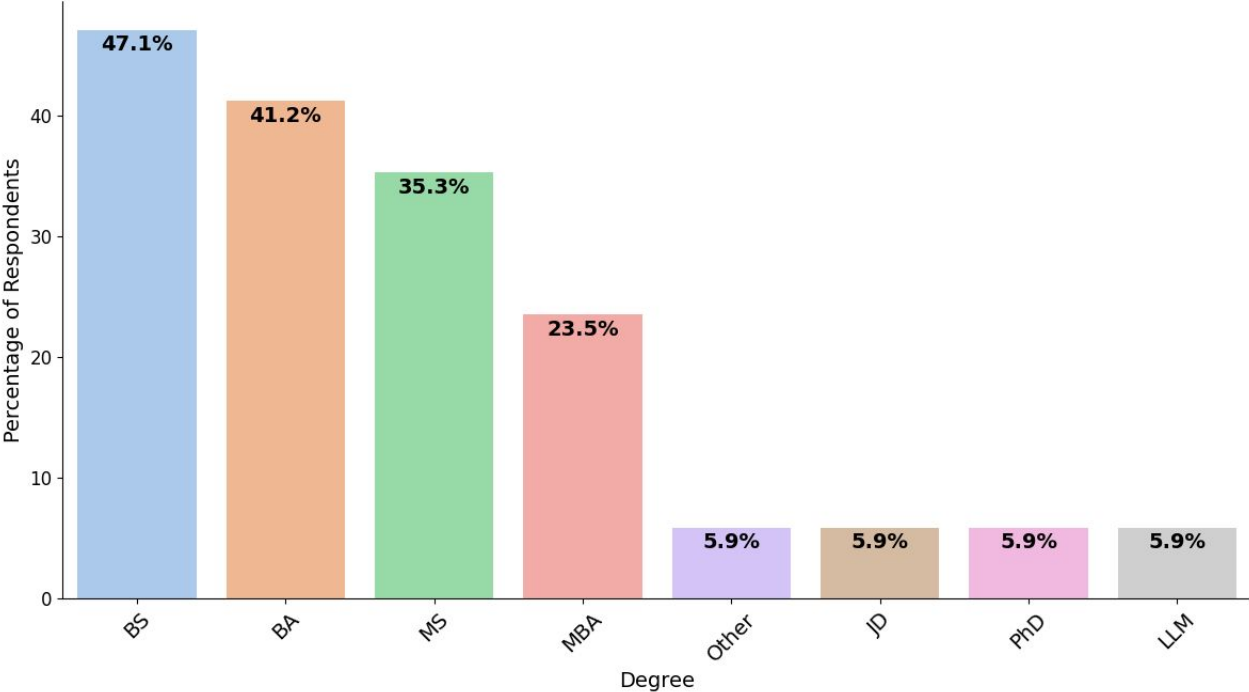


Industries represented by Participants

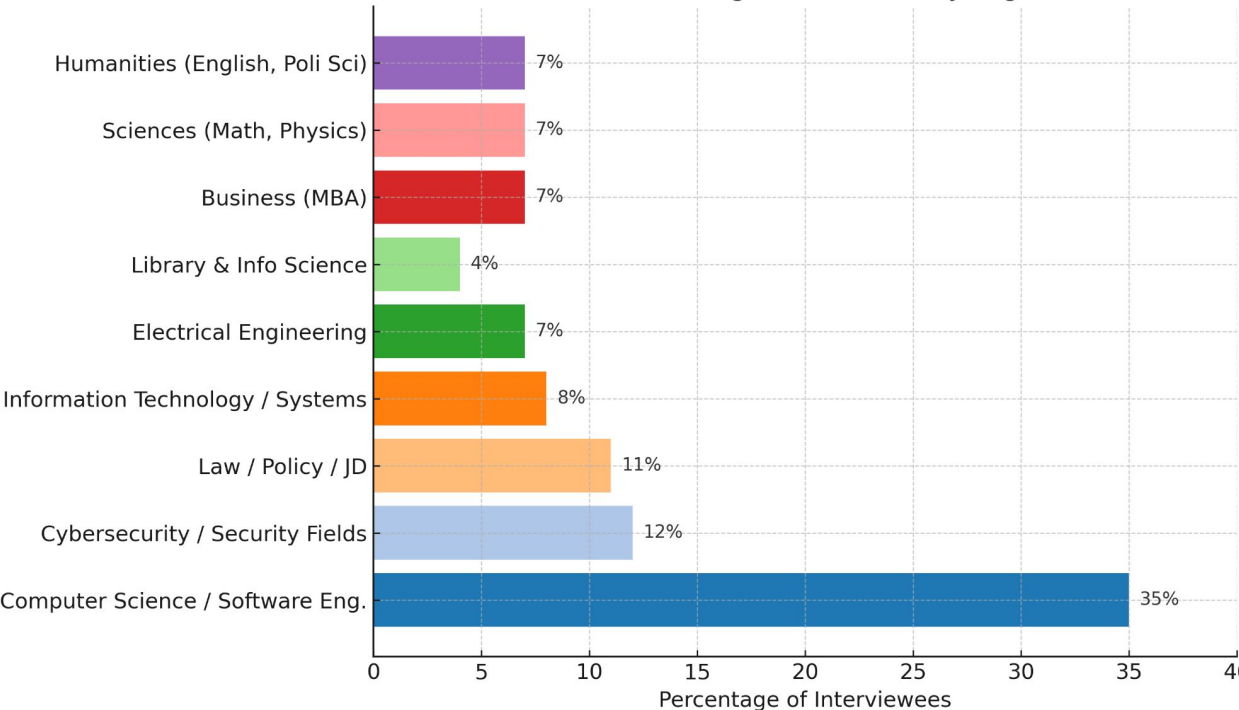


Survey and Interview Participants' Educational Background

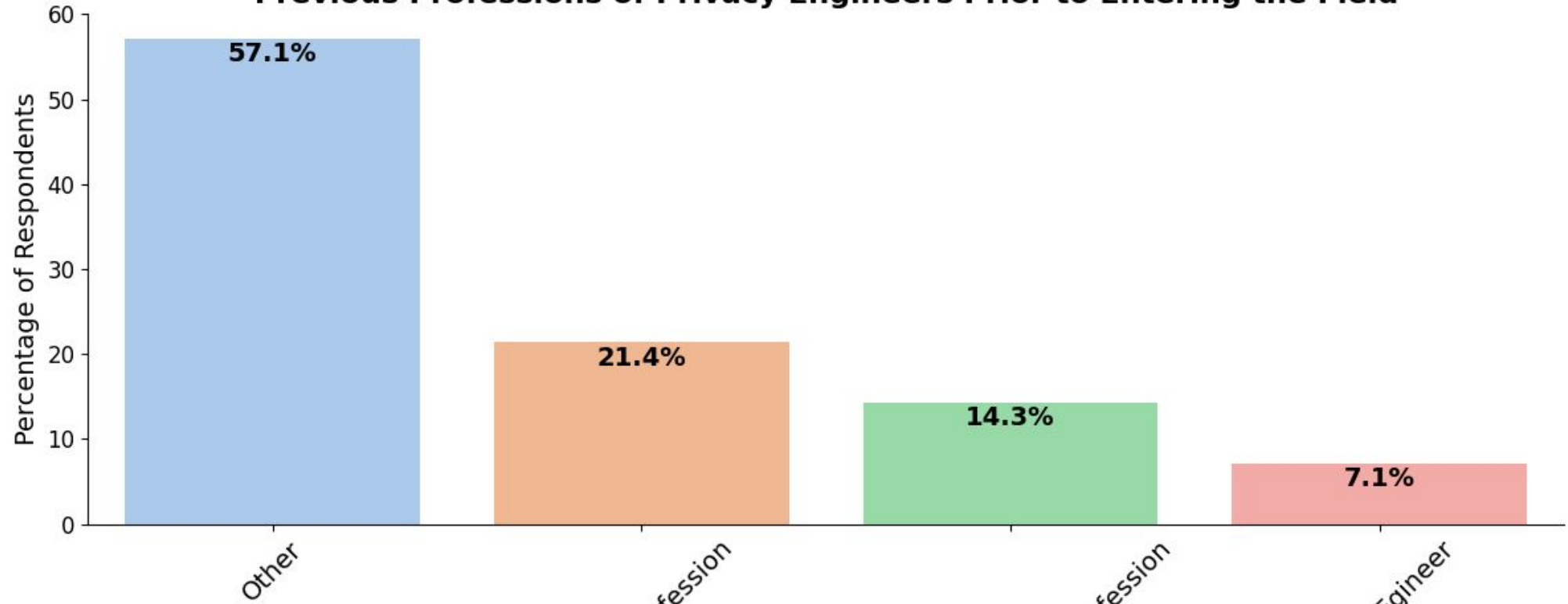
Educational Backgrounds in Privacy Engineering



Educational Backgrounds of Privacy Engineers



Previous Professions of Privacy Engineers Prior to Entering the Field

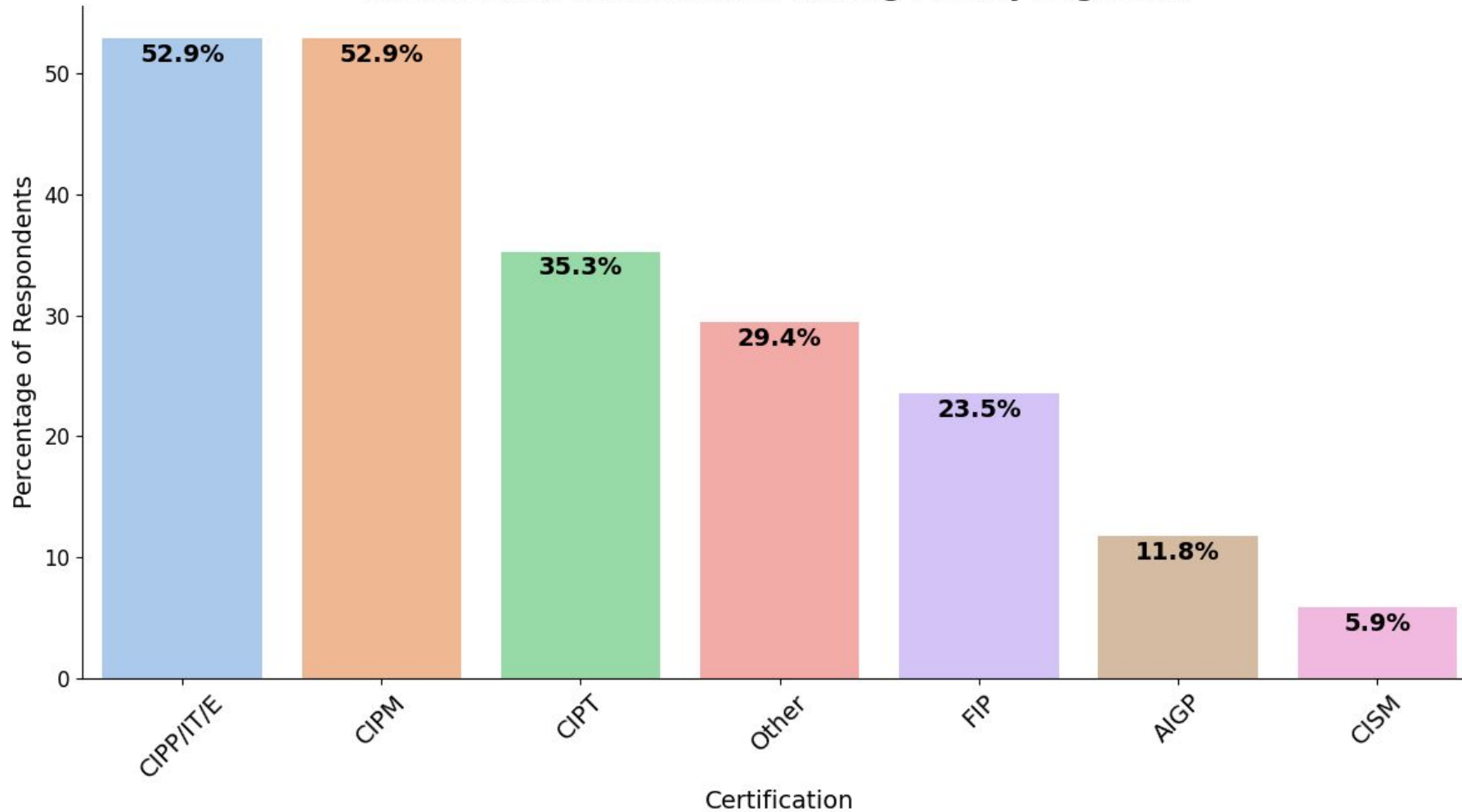


Media	Tech Manager in SaaS
PhD in CS	Founder
Product Manager	Digital Marketing Professional
Customer Success Manager	Software engineer



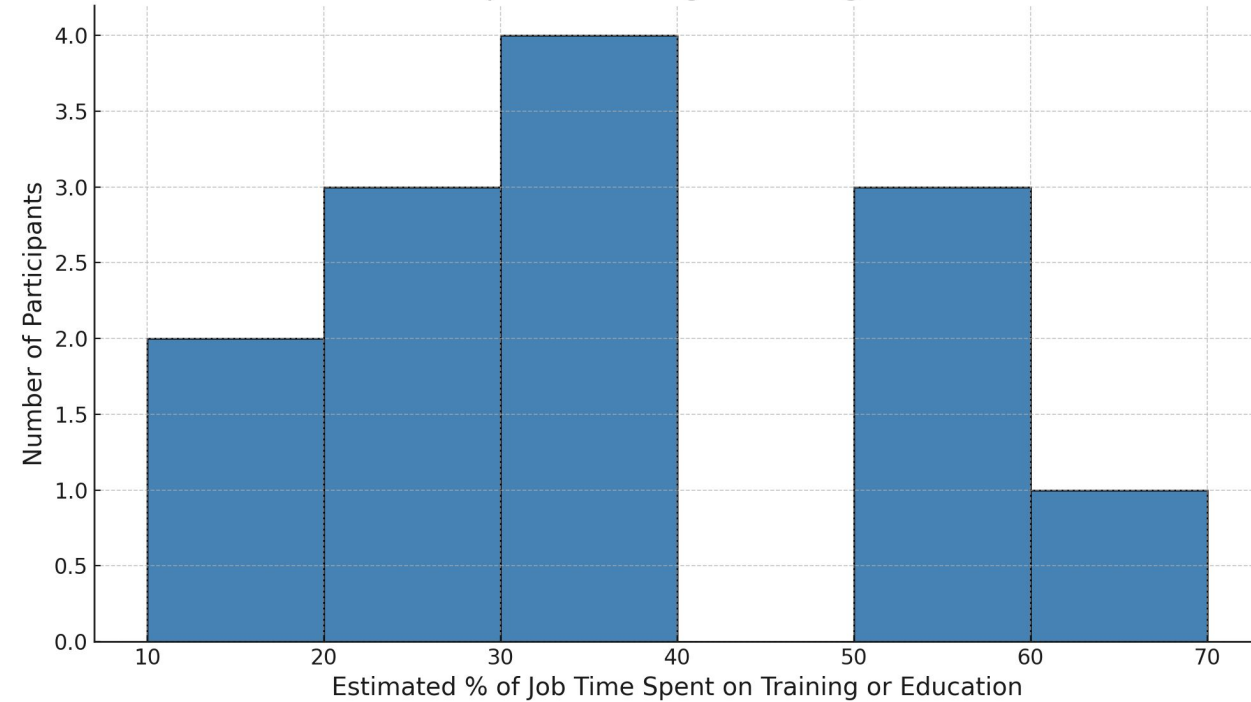
Professional Certifications

Professional Certifications Among Privacy Engineers

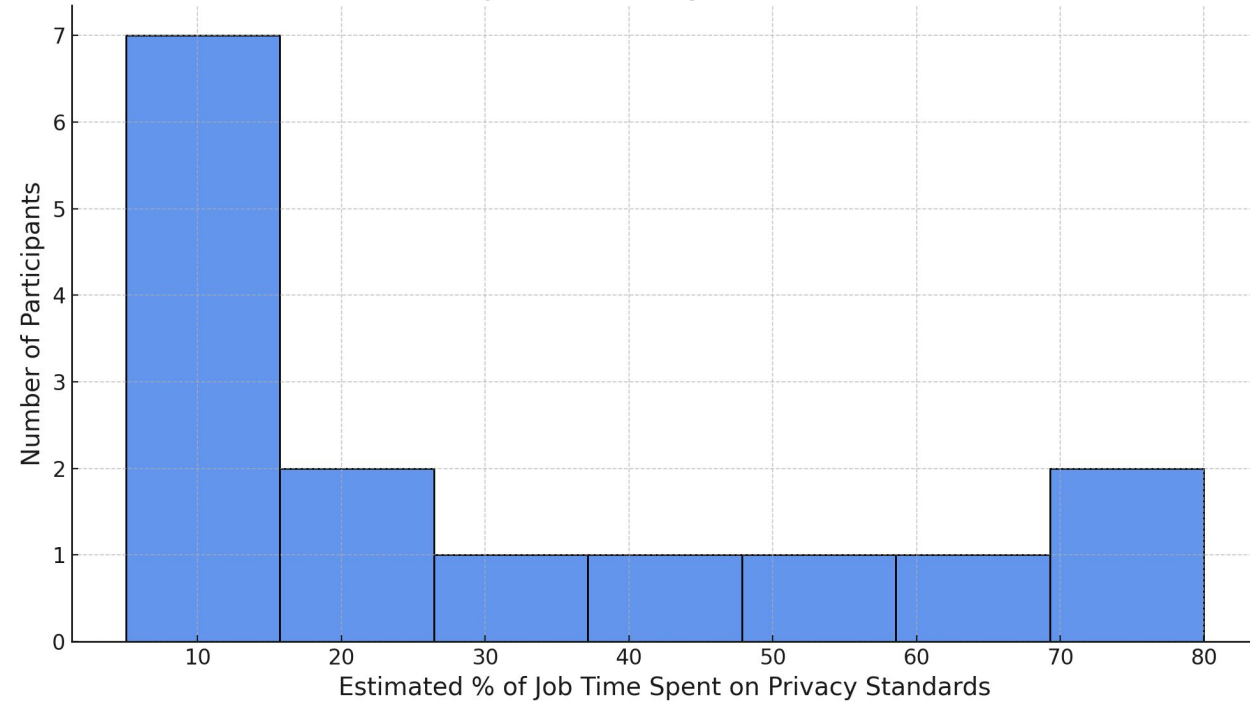


Daily Tasks

Time Spent Educating or Training Others

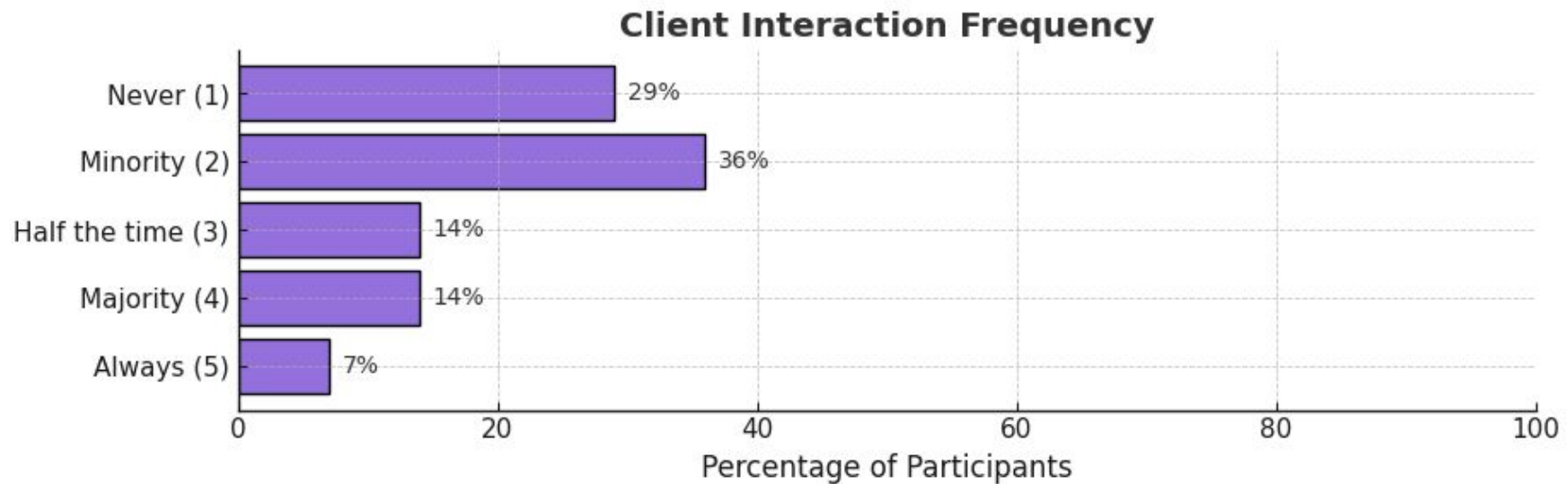
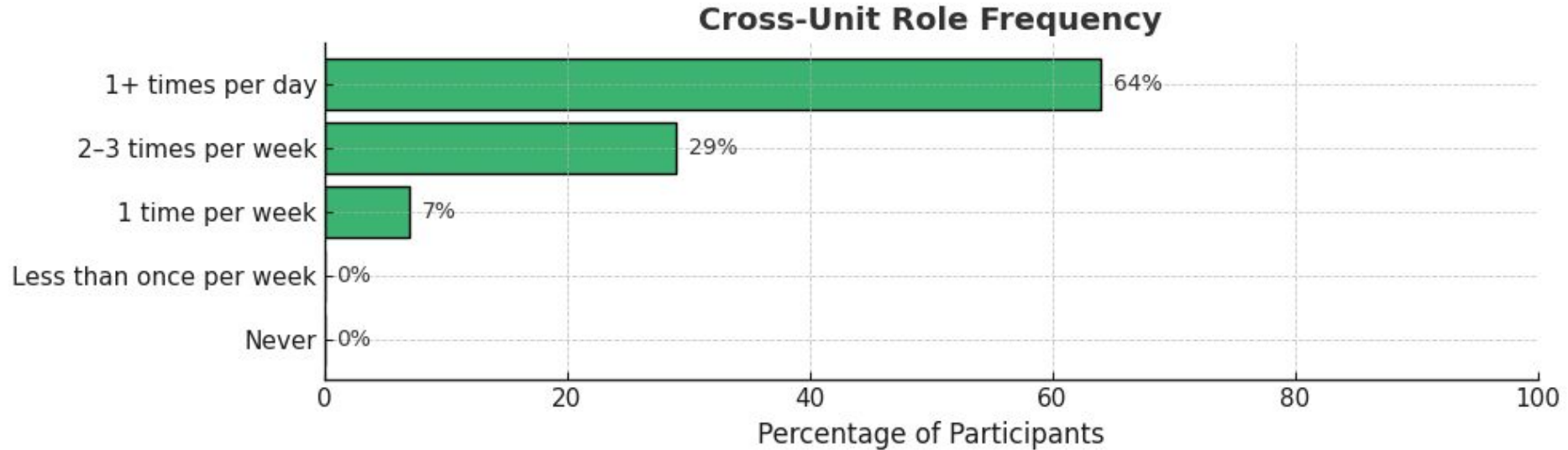


Time Spent on Privacy Standards Tasks






- 100% of participants reported that help interpret legal and technical requirements.

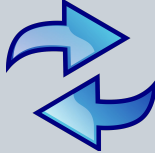


PEs as Liaison



Roles and Skills 1/2

Quotes	Role	Skills Required
<p>“We’ve been trying to communicate that this isn’t just our personal definition of privacy — <i>this is what you have to do to be legally compliant in Europe!</i>”</p>	<p>Advocate</p> 	<p>Persuasion, communication, stakeholder engagement</p>
<p>“I built the system that helps the legal team by checking for personal data in every micro-service when a new access-or-deletion request comes in.”</p>	<p>Implementer</p> 	<p>Software engineering, threat modeling, technical policy interpretation</p>
<p>“We’re <i>developing internal frameworks</i> that would combine many of the main frameworks to get a list of controls that are needed.”</p>	<p>Strategist</p> 	<p>Risk analysis, prioritization, framework knowledge, planning</p>

Roles and Skills 2/2

Quotes	Role	Skills Required
<p>"We have quite a <i>strict</i> organizational model of who is supposed to talk to who when. And privacy engineering has violated that completely, because we realized, Oh, actually, <i>we need to be cross functional</i>. and it's caused a lot of people to be unhappy, we're still negotiating, what we're allowed to do and what we're not."</p>	<p>Translator/Bridge</p> 	<p>Bilingual fluency in legal and technical language, facilitation, communication</p>
<p>"I train other privacy folks in our orgs; I might run a session on 'what is pseudonymization?' so they can handle it themselves next time."</p>	<p>Educator/Trainer</p> 	<p>Instructional skills, simplification of complex concepts, documentation, communication</p>
<p>"working with people to like, make sure projects are on track.... I would be monitoring cookies and talking with marketing engineering teams, or I would be working with front end to make sure that that everything's working correctly"</p>	<p>Manager</p> 	<p>Leadership, project management, budgeting, coordination, communication</p>

Challenges 1/2

- “[Sometimes] we realize an issue and it needs to be solved yesterday. So we need leadership buy-in to prioritize. But we can’t fix everything”

-PE-1

- “[Our team] used some outdated and insecure technology to transmit information...And there was a security breach in the results. And it's resulted in quality of life disclosure of patient's health information...”

-PE-2

- “I think privacy is where security was 5-10 years before. Like, we know where all laptops for an organization are. Privacy is still trying to get there from a data perspective.”

-PE-3



Source:
<https://pixabay.com/illustrations/painting-creativity-imagination-4916338/>

Challenges 2/2

- Cross-team translation
- Lack of trainings to stay current
- Budget & tooling gap vs. security
- Underrepresentation of PEs
- Lack of Privacy mindset
- Data breach
- Lack of Holistic approach
- Lack of support from Leadership/Organization



Source:
<https://pixabay.com/photos/the-challenge-winding-road-nature-4830202/>

Implications for Education & Certifications

- Professional Certifications are **helpful** but **not sufficient**; need **hands-on** practicums
- **Interdisciplinary** Skill Sets Are Essential
- Learning Channels Are **Informal** and **Self-Driven**
 - *“Weekly **meetings** with legal teams...”*
 - *•“It's been keeping up to date on **LinkedIn, Slack** groups...”*
 - *•“I go to a lot of conferences, **PEPR, SOUPS**...I actually learned stuff.”*



Source:
<https://pixabay.com/illustrations/online-education-internet-3412498/>

Opportunities

- Interdisciplinary Growth and Career Flexibility
- Cross-Functional Leadership
- Shaping Policy and Culture
- PEs can shape the privacy infrastructure of AI systems
- Cross-functional Roles in Responsible AI Teams
- Establishing Formal Degree Programs (Under/Grad)



Source:
<https://pixabay.com/illustrations/light-bulbs-light-idea-energy-lamp-1125016/>

-Thank you!
-Q&A

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