

# The professional profile of PhD-holders

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### Core business

#### PHASE 1 Skill development

Throughout my 1st year of PhD journey, I have set clear research and career objectives while regularly reviewing them with my supervisor. I have expanded my technical expertise by learning advanced simulation methods like Molecular dynamics simulations, scientific programming (e.g., Python, C++), and data analysis, and complemented these with transferable skills in scientific writing and presenting posters at international conferences. I actively seek feedback from supervisors and colleagues to improve my work and professional development. By participating in international scientific events, I have strengthened my professional network and gained experience working in an international research environment, preparing me for diverse career opportunities.

*Sets his professional goals to be ambitious yet realistic.*

*Identifies and develops means to enhance his employability throughout his career; manages his professional development.*

*Broadens and upgrades his skillset, personal qualities and achievements.*

*Uses his networks to expand his scope of competence.*

*Knows how to transfer his expertise to other fields of activity.*

*Realizes the necessarily international dimension of his career path.*

*Accepts input from a mentor or coach to benefit his professional development.*

#### PHASE 2 Evaluation

I developed critical evaluation skills by systematically reviewing scientific literature and assessing its relevance, methodology, and contribution to my research topic. I regularly benchmarked my own results against published studies and discussed them with my supervisor and peers to ensure scientific rigor and added value. I actively presented my work in group meetings and conferences, where I received constructive feedback and used it to refine my analyses. Additionally, I participated in peer discussions and informal reviews of colleagues' work, which strengthened my ability to provide balanced, evidence-based feedback and to critically appraise research in my field.

*Knows how to regularly evaluate the progress, impact and outcomes of his staff's activities.*

*Takes part in evaluating both internal and external projects.*

*Is able to evaluate hypotheses and concepts lying beyond his field of expertise.*

*Encourages his staff to take ownership of the evaluation process.*

#### PHASE 1 Information management

I regularly conducted systematic literature reviews to understand the state of the art in my research field, using bibliographic databases such as arXiv and Google Scholar. I developed efficient strategies to identify relevant and high-quality scientific sources and learned to critically assess their reliability, methodology, and relevance. When needed, I sought guidance from experienced colleagues and supervisors to improve my information management and ensure robustness in my research workflow.

*Knows how to review the state of the art (SOTA) in a scientific topic.  
Makes efficient use of information-gathering methods, identifies pertinent resources, particularly bibliographic resources.  
Masters web-based research (e.g., bibliographic databases, patent databases)  
Knows how to judge the pertinence of information, critique sources and check source reliability.  
Designs and implements information-gathering and management systems using suitable technology.  
Addresses issues relating to the security and life cycle of data.  
Seeks out support from experts in information and data management.*

### **PHASE 1 Expertise and methods**

I developed a strong understanding of the fundamental concepts and recent advances in my research field, and I positioned my work within an international scientific context through conferences. I mastered relevant computational and theoretical methods, including simulation techniques and data analysis tools, and applied them appropriately to address specific research problems in glassy physics. I regularly formulated research questions and hypotheses based on literature and observations, and I evaluated alternative approaches when needed. I defended my results in group meetings and conferences, supporting my conclusions with clear evidence. I also improved my ability to present complex ideas in a structured, concise, and scientifically rigorous manner.

*Masters the basic knowledge and key concepts of his field and knows their history and their significance.  
Is familiar with recent progress in his field.  
Can view his research activities within an international context.  
Is familiar with the investigative methods and techniques of his field (including mathematics and statistics) and can explain why they are appropriate for a given purpose.  
Is able to consider alternative methods and techniques.  
Is able to formulate problems and hypotheses according to needs.  
Defends his research findings in a constructive manner; provides evidence to support his ideas and proposals.  
Organizes his presentations in a clear, informative and concise manner.*

## **Personal and relational qualities**

### **PHASE 1 Communication**

I developed strong communication skills by presenting my research clearly to both specialist and non-specialist audiences at group meetings and international conferences. I adapted my communication style depending on the audience and purpose, ensuring clarity and precision. I regularly used tools such as slides and scientific writing to effectively present my work. I also contributed to knowledge sharing within my research group through discussions and presentations, and improved my ability to communicate in English in academic contexts.

*Knows how to put together a persuasive presentation and communicate about his project or his activity.  
Understands, interprets and communicates appropriately in a register suited to his aims and his audience.  
Masters a range of communication tools.  
Masters his online identity.  
Contributes to the dissemination of knowledge within the company, and demonstrates effective teaching skills.  
Is proficient in at least English and one other world language.*

### **PHASE 1 Collaboration**

I developed collaborative skills by working closely with my supervisors and group members. I contributed to joint discussions and research projects, sharing ideas and results constructively. I also expanded my professional network through conferences, which helped me exchange knowledge and improve my research.

*Develops and maintains cooperative networks.  
Knows how to build a professional network for his own and the company's benefit.  
Is considered an authority in his field of expertise.  
Is able to envisage his work in a partnership framework; evaluates the benefits and limitations of a partnership and identifies shared and conflicting interests.*

### **PHASE 1 Analysis, synthesis and critical thinking**

I developed strong analytical and critical thinking skills by evaluating both my own results and those of others in the literature. I learned to synthesize complex information into clear key ideas and to prioritize relevant information according to research objectives.

*Analyzes his own findings and those of his peers.  
Is able to synthesize; expresses key ideas clearly.  
Can sort and rank information according to the goal.  
Pursues his reasoning and hypotheses free of dogmatism or ideological bias.  
Has the objectivity to consider various schools of thought; is able to modify his point of view.  
Demonstrates intellectual rigor.*

### **PHASE 1 Open-mindedness and creativity**

*Demonstrates an ability to acquire knowledge; shows flexibility and open-mindedness. Engages in interdisciplinary activities.  
Possesses a constructive style of questioning and scientific doubt.  
Develops, takes ownership of and tests new ideas; is clever; seizes opportunities.  
Interacts with and seeks the collaboration of professionals of different cultures; knows how to accommodate cultural differences.*

### **PHASE 1 Commitment**

I maintained strong motivation driven by curiosity for my research topic and the goal of producing meaningful scientific results. Moreover, I stayed committed even when facing technical challenges or setbacks by systematically troubleshooting problems and seeking feedback when needed.

*Recognizes and can clearly identify his sources of motivation.  
Is able to sustain his commitment and motivation in the face of setbacks and adversity.  
Deals efficiently with the routine aspects of his job.  
Strives for excellence; shows determination.  
Learns from his mistakes and bounces back from failures.  
Relies on the support and assistance of his peers.*

### **PHASE 1 Integrity**

I adhered strictly to scientific and institutional ethical standards in conducting and reporting research. I ensured integrity in data processing by accurately recording, analyzing, and presenting results without manipulation. I respected intellectual property by properly citing all sources and acknowledging contributions from collaborators.

*Respects the standards and practices of his entity.  
Demonstrates integrity in the processing and dissemination of data.  
Demonstrates integrity with respect to his partners' or competitors' contributions in accordance with intellectual property rules.  
Upholds the confidentiality and anonymity of subjects taking part in studies and research.  
Honors his commitments and ensures the congruence between actions and words.  
Declares any conflict of interest.*

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