DS and RSE competencies outside the Research Cycle

This section collects transversal competencies in Data Science and Research Software Engineering (RSE) that support research but are not tied to a specific phase of the research process.

1. Ethical and Legal Awareness

Data Ethics

- Awareness of bias and fairness in data
- Model transparency, explainability, and accountability
- Risk and impact assessment (e.g., algorithmic decision-making)
- Ethical reflection throughout the data lifecycle

Data Privacy and Legal Contexts

- National and international data protection laws
- Differentiation between personal and non-personal data
- Licensing and data usage regulations
- Data compliance skills

2. Interdisciplinary Collaboration

Communication and Project Skills

- Project planning and evaluation
- Communication across disciplines and with non-experts
- Knowledge of marketing and dissemination strategies

Domain Integration and Labs

- Ability to adapt and apply methods in various domains
- Independent and team-based domain project execution
- Research data management within domains
- Interdisciplinary labs as agile learning environments

3. Computer Science Specialties

Various CS specializations such as

- database programming
- constraint programming
- machine learning
- algorithmic design
- ...