Responsible Data Science and AI Ethics in Research Training Course

Professional Development Training Course Outline

Category	Research and Data Analysis	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In the age of digital transformation and AI innovation, conducting research on sensitive topics demands a nuanced understanding of data ethics, privacy, informed consent, and bias mitigation. The integration of responsible data science with ethical AI frameworks has become indispensable to ensure that research practices respect human dignity, cultural contexts, and legal standards. Responsible Data Science and AI Ethics in Research Training Course empowers researchers, analysts, and technologists to navigate the ethical complexities of sensitive topics such as mental health, gender identity, migration, political dissent, and social inequalities through a lens of integrity and accountability.

As AI-driven methodologies become embedded in academic, corporate, and nonprofit research sectors, the need for ethically grounded, inclusive, and transparent data practices is greater than ever. This course provides a comprehensive, hands-on learning experience rooted in current global ethical standards and real-world case studies. Participants will learn to apply responsible AI principles, conduct risk assessments, utilize privacy-enhancing technologies, and address algorithmic bias in sensitive-topic research.

Programme Curriculum

Responsible Data Science and AI Ethics in Research Training Course

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Course Objectives

1. Understand the principles of ethical AI and their relevance in researching sensitive subjects.
2. Apply privacy-by-design techniques in data collection and analysis.
3. Explore bias detection and fairness auditing in machine learning models.
4. Implement data anonymization and differential privacy methods.
5. Examine the role of informed consent and participant rights in research ethics.
6. Conduct risk-benefit analyses in high-stakes data environments.
7. Identify and mitigate algorithmic discrimination in predictive analytics.
8. Evaluate intersectionality and cultural sensitivity in research methodologies.
9. Build frameworks for ethical decision-making in AI-powered research.
10. Analyze governance models and regulatory compliance (e.g., GDPR, HIPAA).
11. Design inclusive datasets that reflect diverse and marginalized populations.
12. Leverage human-centered AI for ethically aligned research outcomes.
13. Explore emerging global standards for responsible data science and AI ethics.

Target Audiences

1. Academic Researchers
2. AI and Machine Learning Engineers
3. Data Scientists and Analysts
4. Research Ethics Committee Members
5. Government and NGO Policy Makers
6. Healthcare and Public Health Professionals
7. Human Rights and Social Justice Advocates
8. Technology Product Designers

Course Duration: 5 days

Course Modules

Module 1: Foundations of Ethical AI and Sensitive Research

- Introduction to AI ethics in sensitive domains
- Historical context of unethical research practices
- Overview of ethical frameworks (Belmont, OECD, UNESCO)
- Importance of trust and accountability
- Introduction to ethical dilemmas in research
- **Case Study:** Facebook Emotional Contagion Study (2014)

Module 2: Data Privacy, Anonymity, and Protection

- GDPR and global privacy standards
- De-identification and pseudonymization
- Data lifecycle management
- Role of encryption and secure storage

- Consent for data usage and withdrawal
- **Case Study:** Strava Heatmap exposing military bases

Module 3: Bias, Fairness, and Representation in Data

- Types of bias (sampling, labeling, algorithmic)
- Tools for bias detection and mitigation
- Fairness in ML models
- Data representativeness and inclusivity
- Equity vs. equality in data science
- **Case Study:** COMPAS Recidivism Algorithm Bias

Module 4: Risk Assessment and Harm Reduction

- Ethical risk assessment models
- Anticipating unintended consequences
- Stakeholder impact analysis
- Vulnerability and power dynamics
- Proactive harm reduction strategies
- **Case Study:** Predictive Policing and Racial Profiling

Module 5: Informed Consent and Participant Autonomy

- Principles of informed and ongoing consent
- Designing accessible and clear consent processes
- Consent in digital and AI-driven environments
- Rights to opt-out and withdraw
- Ethical issues in deception and covert research
- **Case Study:** Cambridge Analytica and Facebook Data Breach

Module 6: Inclusive and Culturally Sensitive Research Design

- Addressing intersectionality in research
- Designing culturally aware research tools
- Local context and indigenous data rights
- Language and framing in surveys/interviews
- Representation of minority populations
- **Case Study:** AI Systems and Gender Recognition Technology

Module 7: Regulatory Compliance and Governance

- Legal frameworks: GDPR, HIPAA, Data Protection Acts
- Ethical review boards and institutional review
- Auditing AI systems
- Data governance and stewardship models
- Cross-border data ethics
- **Case Study:** Google DeepMind and NHS Patient Data Scandal

Module 8: Implementing Responsible AI in Practice

- Ethical toolkits and checklists
- Embedding ethics in AI development lifecycle
- Collaboration with multidisciplinary teams
- Building ethics into KPIs and business strategy
- Continuous monitoring and accountability
- **Case Study:** OpenAI’s Use Case Review and Risk Management

Training Methodology

- Interactive expert-led presentations
- Real-world case study analysis
- Group activities and collaborative exercises
- Hands-on privacy and bias audit simulations
- Ethical impact mapping and solution design
- Reflection journals and moderated discussions

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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