Deep Learning for Social Scientists 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

Deep Learning for Social Scientists Training Course empowers social scientists to harness neural networks, predictive analytics, and AI-driven insights to uncover patterns in societal trends, human behavior, and large-scale social phenomena. Participants will gain practical skills in data preprocessing, model development, interpretability, and real-world application, enabling them to translate advanced computational methods into actionable social science research.

In this intensive program, learners will explore cutting-edge machine learning frameworks, including TensorFlow and PyTorch, while applying deep neural networks to social datasets. By bridging the gap between computational methods and social research, participants will enhance their analytical capabilities, create evidence-based policy recommendations, and contribute to the field with innovative research insights. This course emphasizes hands-on learning, case studies, and interdisciplinary applications, ensuring that social scientists can confidently leverage AI, deep learning, and big data analytics in their work.

Programme Curriculum

Deep Learning for Social Scientists Training Course

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Course Objectives

1. Master foundational concepts of Deep Learning and Neural Networks for social science applications.
2. Understand data preprocessing, feature engineering, and cleaning techniques for social datasets.
3. Develop predictive models to forecast social trends and behavioral patterns.
4. Apply convolutional and recurrent neural networks in analyzing textual and time-series social data.
5. Gain proficiency in Python, TensorFlow, and PyTorch for social science research.
6. Explore explainable AI (XAI) to ensure model transparency and ethical outcomes.
7. Utilize natural language processing (NLP) for social media and survey analysis.
8. Integrate big data analytics for large-scale societal datasets.
9. Conduct impact assessment using AI-driven simulations.
10. Develop skills for data visualization and effective communication of model insights.
11. Implement policy analysis frameworks leveraging predictive analytics.
12. Examine case studies of AI and deep learning in social science research.
13. Cultivate the ability to innovate and conduct interdisciplinary research combining social science theory and deep learning methods.

Target Audience

1. Social scientists and sociologists
2. Political scientists and policy analysts
3. Economists and behavioral researchers
4. Data analysts in social sectors
5. Academic researchers and postgraduate students
6. Social media analysts and communication researchers
7. Public policy consultants
8. NGO and think-tank data specialists

Course Modules

Module 1: Introduction to Deep Learning for Social Sciences

- Overview of AI, ML, and DL in social research
- Key differences between ML and DL
- Applications in sociology, economics, and political science
- Ethical considerations and responsible AI
- **Case Study:** Predicting voter behavior using neural networks

Module 2: Data Collection and Preprocessing

- Types of social science data

- Data cleaning and missing value handling
- Feature selection and transformation
- Data normalization and scaling
- **Case Study:** Preparing Twitter data for sentiment analysis

Module 3: Neural Networks Fundamentals

- Perceptrons and multi-layer networks
- Activation functions and loss functions
- Forward and backward propagation
- Overfitting, underfitting, and regularization
- **Case Study:** Modeling income inequality with neural networks

Module 4: Advanced Deep Learning Architectures

- Convolutional Neural Networks (CNN) for image/social data
- Recurrent Neural Networks (RNN) for time-series and text
- Long Short-Term Memory (LSTM) networks
- Autoencoders for dimensionality reduction
- **Case Study:** Predicting migration trends using LSTM

Module 5: Natural Language Processing (NLP)

- Text preprocessing and tokenization
- Word embeddings
- Sentiment analysis and topic modeling
- Chatbots and automated survey analysis
- **Case Study:** Analyzing social media sentiment during elections

Module 6: Model Evaluation and Optimization

- Metrics for regression and classification
- Cross-validation and hyperparameter tuning
- Avoiding bias in social datasets
- Model interpretability techniques
- **Case Study:** Evaluating predictive models for poverty indices

Module 7: Explainable AI and Ethics in Social Science

- Introduction to XAI tools
- Fairness, accountability, and transparency
- Bias detection and mitigation strategies
- Ethical deployment of AI in social contexts
- **Case Study:** Reducing algorithmic bias in criminal justice datasets

Module 8: Real-World Applications and Capstone Project

- AI-driven policy analysis and simulation
- Integrating deep learning into research workflow
- Visualization of social trends and predictions
- Presenting insights to stakeholders
- **Case Study:** Capstone project: Forecasting urban development trends

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

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

Start Date	End Date	Location	Price
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
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:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com