

CS8803 AI, Ethics, and Society Lesson Video Runtimes

Module	Lesson	Lesson Duration	Lecture	Lecture Duration
			Course Introduction	2:35
Module 1: Data, Individuals, and Society			Module 1 Introduction	0:44
	Lesson 1: Introduction	5:50	China's Social Credit System	1:10
			What is Big Data?	4:40
	Lesson 2: Overview	17:16	Targeted Messaging	5:09
			What's the Problem?	5:34
			AI and Unintended Consequences	6:33
	Lesson 3: Ethics vs. Law	15:10	Relationship between Ethics and Law	5:05
			Ethical Decision Making	2:39
			Codes of Ethics	1:23
			Ethical Issues for Big Data	5:02
			Example Ethical Issue	1:01
	Lesson 4: Data Collection	14:21	Facebook Cambridge Analytica Scandal	0:59
			Information Privacy	5:22
			Data Management Practices	4:13
			Intellectual Property Rights and Protections	3:47
	Lesson 5: Fairness and Bias	22:05	What is Bias?	3:42
			An Incorrect Assumption About AI	3:53
			Algorithmic Bias	2:44
			Biases in Data	5:28
			Fairness	3:42
			Principles for Quantifying Fairness	2:36
Module 2: BS of Big Data & Stats 101			Module 2 Introduction	0:48
	Lesson 6: Overview	16:21	Why Statistics?	3:57
			How to Mislead through Poor Sampling	1:47
			How to Mislead through Poor Analysis	5:05
			How to Mislead through Interpretation	5:32

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	Lesson 7: Python and Stats 101	21:10	Defining Data Analytics	4:32
			All About the Data	6:52
			Introduction to Python and Jupyter	0:41
			Basic Statistical Measures: Data Analy...	8:39
			Hands on Tutorial: Pandas Basics 1	0:26
	Lesson 8: Descriptive Statistics	20:35	Types of Studies & Sampling Errors	4:19
			Median, Mean and Mode	5:52
			How to Mislead with Averages	2:40
			Frequency Distribution	2:00
			Variability	3:22
			Descriptive Statistics in Pandas	1:58
			Hands on Tutorial: Pandas Basics 2	0:24
	Lesson 9: Inferential Statistics: Sampling Bias	36:57	Inferential Statistics Introduction	3:00
			Warm Up Exercise	3:32
			Sampson's Paradox	2:26
			Biased Sampling	7:11
			Biased Sampling Example	1:13
			Types of Randomized Sampling	9:05
			Sampling Bias Example Experiments	10:30
	Lesson 10: Inferential Statistics: Causation vs Correlation	17:53	Correlation vs. Causation	4:04
			Correlation vs Causation Examples	4:17
			Relationships	9:32
	Lesson 11: Inferential Statistics: Confidence	17:51	Empirical Rule	9:09
			Population Proportions and Margin of Error	4:06
			Sample Size vs. Margin of Error	4:36
Module 3: AI/ML Techniques			Module 3 Introduction	1:10

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	Lesson 12: Word Embeddings	36:30	Fairness in AI/ML	1:07
			Word Embedding (NLP)	5:05
			Word Similarity & Relatedness	8:48
			Cosine Similarity & Word Analogy	7:49
			Word Embeddings (word2vec)	13:41
	Lesson 13: Bias in Word Embeddings	12:27	Bias in Word Embedding	6:34
			Why Does This Happen? (Word Embeddings)	5:53
	Lesson 14: Facial Recognition	22:08	Facial Recognition	5:16
			Facial Recognition Algorithms	8:46
			Deep Neural Network Examples	8:06
	Lesson 15: Bias in Facial Recognition	13:53	Issues with Facial Recognition Algorithms	4:18
			Bias in Facial Recognition	5:09
			Why Does This Happen? (Facial Recognition)	4:26
	Lesson 16: Predictive Algorithms Part 1	37:34	What are Predictive Algorithms?	14:18
			Predictive Algorithm Examples	7:02
			Learning Methods	2:55
			Clustering	4:34
			Regression	5:35
			Decision Tree	3:10
	Python Predictive Algorithms (Supplemental Material)	N/A	Regression Algorithm: Supervised Machine Learning	N/A
			Classification: Supervised Machine Learning	N/A
			Clustering: Unsupervised Machine Learning	N/A
			Python Deep Learning	N/A
	Lesson 17: Predictive Algorithms Part 2	13:43	Crime Based Predictive Algorithms in Use	2:56
			COMPAS	6:55
			Judges' Release Decisions vs. Machine Predictions and Crime Risk	3:52

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	Lesson 18: Predictive Algorithms Part 3	8:24	Bias in Predictive Algorithms	8:24
Module 4: Bias Mitigation Applications			Module 4 Introduction	0:46
	Lesson 19: Fairness and Bias	22:31	Fairness and Bias	5:47
			Addressing Source of Bias	3:44
			Addresssing Fairness Measures	13:00
	Lesson 20: Fairness and Bias Assessment Tools	5:27	AI Fairness 360	3:34
			What if Tool	1:53
	Lesson 21: AI/ML Techniques for Bias Mitigation	7:54	Solutions to Mitigate Bias	4:57
			Fairness-Aware Algorithms Tradeoffs	2:57
	Lesson 22: AI, Society, and Ethics Wrap-Up	7:06	It's Not Easy	4:22
			Last Thoughts	2:44
			Course Conclusion	0:42