



ADVANCED DATA TRAINING CATALOGUE

DATA ACTION LAB

Fall '19 – Winter '20

The **Data Action Lab** (DAL) is a joint venture of 3 Ottawa-area companies with a combined experience of:

- 50+ university courses taught;
- 40+ corporate workshops given;
- 60+ data analysis and A.I. projects completed, during
- 35+ years working with data.

Through its *Advanced Data Training*, DAL seeks to:

- provide a shared space for **data consumers, producers, practitioners, scientists** and **champions**;
- provide paths for **education** and **enrichment** for all of these groups;
- keep pace with **developments** in the digital arena and keep participants moving along with these, and
- provide **just-in-time learning opportunities** for participants, focusing on their challenges and skillsets.

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Data Training Framework

In October 2012, *Harvard Business Review* published an article predicting that **data scientists** would be the “rock stars of the 21st century” and comparing them with the ubiquitous Wall Street “quants” of the '80s and '90s in terms of impact. The same article declared data scientists to be a “hybrid of data hacker, analyst, communicator, and trusted adviser” – a far cry from the days when data analysts played second fiddle to financial experts and marketing gurus!

Would-be data scientists are usually introduced to the field *via* machine learning algorithms and applications. The Data Action Lab, through the use of **micro-training sessions** (MCTs) of 3 hours each (minimum class size: 5, maximum class size: 25), provides an introduction to various concepts and algorithms of Data Analysis, Machine Learning, Data Science, and Artificial Intelligence, as they are used in common programming environments.

The applications of these concepts are illustrated with the help of examples (ranging from the simple to the elaborate), along with discussions of common challenges and pitfalls, and are reinforced through the analysis of real-life data in a number of labs.

Data Training Framework

The MCTs are divided between conceptual lessons (LEC) and hands-on labs (LAB); the current catalogue contains 90+ MCTs, arranged in sequential thematic **modules**, including *Data Science Basics*, *Data Visualization*, *Machine Learning 101*, *Bootcamps*, *Focus on Supervised and Unsupervised Learning*, *Text Mining and Natural Language Processing*, *Learning by Doing*, *Special Topics in A.I./M.L./D.S.*, etc.

In the early stages, very little mathematical or computer programming knowledge is required but some experience with quantitative ideas is assumed (an undergraduate degree in a quantitative discipline would be an asset, as would exposure to programming). Most of the necessary concepts will be introduced on an **as-needed** basis.

Participants are expected to practice and work on examples outside of the classroom.

Participants must provide their own laptop with Wi-Fi connectivity, the ability to run R/Python Jupyter notebooks from a web browser, and the ability to install software on-the-fly (such as Power BI, R Studio, Anaconda, etc.)

Participants select MCTs from the catalogue and register online at data-action-lab.com.

Price per MCT (HST not included)	Regular Rate 9- MCTs	Bulk 10+ MCTs
Early-Bird Rate (reg. prior to 31-Jul)	\$200/MCT	\$125/MCT
Post-Deadline Rate (reg. after 31-Jul)	\$250/MCT	\$150/MCT

Participants who register to 10+ MCTs at a time are eligible for the **bulk** rate. Participants who register to 9 or fewer MCTs at a time must pay the **regular** rate; additional MCTs can be purchased at the regular rate, until the 10th total MCT, at which point they become eligible for the bulk rate. Any purchase occurring before 31-Jul is further eligible for the **early-bird** rate.

As an example, consider various ways to register to 12 MCTs:

# MCTs (Registration Date)	Bulk / Early (\$125/MCT)	Regular / Early (\$200/MCT)	Bulk / Post (\$150/MCT)	Regular / Post (\$250/MCT)	Total (+ HST)
12 MCTs (30-Jun)	12				\$1500
8 MCTs (30-Jun) + 4 MCTs (12-Jul)	3	9			\$2175
8 MCTs (30-Jun) + 4 MCTs (31-Aug)		8	3	1	\$2300

Scheduled courses are held in the Ottawa downtown core; catalogue courses can also be offered in-house and are available across Canada. Course content and schedule are subject to change.

Send inquiries to info@data-action-lab.com. [Certaines sessions peuvent s'offrir en français au besoin.]



Suggested Paths – Data Roles

MCTs can be taken at any point in the year. Some learners follow the natural paths given by the various modules (Data Science Basics, Machine Learning 101, Text Mining and Natural Language Processing, etc.), while others sample the options provided. We recognize that this flexibility may cause some planning challenges for learners at all levels. To that effect, we offer a number of suggested paths for various **data roles**, which can be combined with stand-alone modules and other paths (certificates available upon completion).

Data Novice

You are looking for a high-level introduction to the world of data, data science, machine learning, artificial and business intelligence. You may be moving into this space from another role.

bootcamps (4): BC-1 to BC-4

core (6): DAB-1, DAB-7 to DAB-10, DAB-12

optional (6): DV-7 to DV-11, RD-1, RD-2

hands-on (4): LBD-9 to LBD-12

Data Engineer

You are interested in understanding the machinery that supports data analysis pipelines. You focus on designing and implementing solutions.

core (8): DAB-1, DAB-6, DAB-7, DAB-8, DAB-11, DAB-12, RD-1, RD-2

hands-on (4): LBD-9 to LBD-12

Data Practitioner

You already work with data in some capacity or have had some training in a relevant discipline (statistics, computer science, science, economics). You want to be exposed to new techniques, enhance your skill set, or re-train to increase your career opportunities.

core (15): DAB-1, to DAB-5, DAB-7 to DAB-10, DAB-12, DV-7, DV-8, DV-10, DV-11, RD-1

hands-on (5): DV-12, LBD-9 to LBD-12

Data Scientist

You already work with data in some capacity and want an introduction to more advanced data analysis techniques, including machine learning, data visualization, and advanced statistical analysis techniques.

core (16): six (6) sessions from each of the DAB, ML groups; 4 sessions from the DV group

optional (8): eight additional sessions from the UL, SL, TM, NLP, Special Topics, or ML groups

hands-on (8): two series from the LBD group

Data Manager

You are working in an area that could benefit from data science, machine learning, artificial and business intelligence, but you are not a practitioner. You may be a director, manager, domain expert or data consumer.

core (6): DAB-1, DAB-7 to DAB-10, DAB-12

optional (6): DV-7, DV-8, DV-10, DV-11, RD-1, RD-2

Contact info@data-action-lab.com for customized suggestions.



Suggested Paths – Learning Interests

MCTs can be taken at any point in the year. Some learners follow the natural paths given by the various modules (Data Science Basics, Machine Learning 101, Text Mining and Natural Language Processing, etc.), while others sample the options provided. We recognize that this flexibility may cause some planning challenges for learners at all levels. To that effect, we offer a number of suggested paths for various **learning interests**, which can be combined with stand-alone modules and other paths (certificates available upon completion).

Visualization and Dashboards (prerequisites: DAB-1)

core (6): DAB-7, DV-7 to DV-11

optional (8): DAB-2, DAB-3, DV-1, DV-3, DV-4, DV-5, RD-1, RD-2

hands-on (2): DV-12 (twice),

Introduction to Data Science (prerequisites: some familiarity with programming)

core (8): DAB-1, DAB-4, DAB-5, ML-3 to ML-8

optional (8): DAB-6, DV-1, DV-3, DV-4, DV-5, ML-1, ML-2, RD-1

hands-on (4): LBD-1 to LBD-4

Advanced Data Science (prerequisites: *Introduction to Data Science*)

core (8): UL-1, UL-3, UL-5, UL-6, SL-1, SL-3, SL-5, SL-6

optional (8): TM-1, TM-3, TM-4, LBD-5 to LBD-8, MI-5

hands-on (4): LBD-9 to LBD-12

Machine Learning Toolbox (prerequisites: some familiarity with programming, DAB-1, DAB-3, DAB-4)

core (16): ML-1 to ML-8, UL-1, UL-3, UL-5, UL-6, SL-1, SL-3, SL-5, SL-6

hands-on (4): LBD-1 to LBD-4

Spotlight on Classification (prerequisites: some familiarity with programming, DAB-1, DAB-3, DAB-4)

core (8): ML-6 to ML-8, MI-5, SL-1, SL-3, SL-5, SL-6

hands-on (4): LBD-9 to LBD-12

Spotlight on Clustering (prerequisites: some familiarity with programming, DAB-1, DAB-3, DAB-4)

core (8): ML-3 to ML-5, MI-5, UL-1, UL-3, UL-5, UL-6

hands-on (4): LBD-9 to LBD-12

Text Analysis (prerequisites: some familiarity with programming, DAB-1, DAB-3, DAB-4)

core (10): TM-1 to 5, NLP-1 to 5

hands-on (4): LBD-5 to LBD-8

Special Topics in A.I. and D.S. (prerequisites: *Introduction to Data Science*)

core (14): BD-1, BD-2, DL-1, DL-3, DSS-1, DSS-2, RS-1, RS-2, AD-1, AD-2, SNA-1, SNA-3, BDA-1, BDA-3

optional (6): MI-1, MI-2, MI-3, MI-4, MI-5, MI-6

Hands-On Data Analysis (prerequisites: none)

core (8): DAB-1, DAB-2, DAB-3, DAB-7, DAB-8, DAB-12, WS-1, WS-2

hands-on (12): LBD-1 to LBD-12

Contact info@data-action-lab.com for customized suggestions.

Micro-Training Sessions ^[‡: matériel également disponible en français]

Data Science Basics: 12 micro-training sessions (8 LEC + 4 LAB; 3 hours each)

Code	Type	Description	(Suggested) Prerequisites	Dates (select 1 of)
DAB-1	LEC	Data science universals; systems thinking [‡]	N/A	05-Sep-19, 31-Oct-19, 08-Jan-20, 04-Mar-20
DAB-2	LEC	Programming basics [‡]	N/A	04-Sep-19, 30-Oct-19, 09-Jan-20, 27-Feb-20
DAB-3	LAB	Programming basics	DAB-2	11-Sep-19, 06-Nov-19, 16-Jan-20, 05-Mar-20
DAB-4	LEC	Data processing [‡]	DAB-1	12-Sep-19, 07-Nov-19, 15-Jan-20, 11-Mar-20
DAB-5	LAB	Data processing	DAB-4	19-Sep-19, 14-Nov-19, 22-Jan-20, 18-Mar-20
DAB-6	LEC	Data engineering basics	DAB-1	10-Sep-19, 05-Nov-19, 14-Jan-20, 03-Mar-20
DAB-7	LEC	Basic data analysis techniques [‡]	DAB-2, 3, 4, 5	24-Sep-19, 19-Nov-19, 28-Jan-20, 17-Mar-20
DAB-8	LAB	Basic data analysis techniques	DAB-7	01-Oct-19, 26-Nov-19, 04-Feb-20, 24-Mar-20
DAB-9	LEC	Measures and metrics [‡]	DAB-1	18-Sep-19, 13-Nov-19, 23-Jan-20, 12-Mar-20
DAB-10	LAB	Measures and metrics	DAB-9	25-Sep-19, 20-Nov-19, 30-Jan-20, 19-Mar-20
DAB-11	LEC	Data and information architecture [‡]	DAB-1	17-Sep-19, 12-Nov-19, 21-Jan-20, 10-Mar-20
DAB-12	LEC	Predictive analytics	DAB-1, DAB-5	02-Oct-19, 27-Nov-19, 06-Feb-20, 26-Mar-20

Data Visualization: 12 micro-training sessions (5 LEC + 7 LAB; 3 hours each)

Code	Type	Description	(Suggested) Prerequisites	Dates (select 1 of)
DV-1	LEC	Simple multi-variable methods [‡]	N/A	26-Sep-19, 29-Jan-20
DV-2	LAB	Simple visualizations in R/Python	DV-1	By request
DV-3	LEC	Design suggestions [‡]	DV-1	17-Oct-19, 05-Feb-20
DV-4	LEC	Grammar of graphics; dashboards	DV-3	24-Oct-19, 12-Feb-20
DV-5	LAB	Visualizations with ggplot2 [‡]	DV-4	31-Sep-19, 19-Feb-20
DV-6	LAB	Visualizations with seaborn	DV-4	By request
DV-7	LAB	Introduction to Power BI	N/A	03-Sep-19, 15-Oct-19, 12-Nov-19, 28-Jan-20, 25-Feb-20,
DV-8	LAB	Dashboards with Power BI	DV-7	01-Oct-19, 29-Oct-19, 26-Nov-19, 11-Feb-20, 10-Mar-20
DV-9	LAB	Advanced Power BI	DV-8	08-Oct-19, 29-Oct-19, 10-Dec-19, 11-Feb-20, 24-Mar-20
DV-10	LEC	Best practices (part I)	DV-1 or DV-7	03-Sep-19, 15-Oct-19, 03-Dec-19, 07-Jan-20, 18-Feb-20, 31-Mar-20
DV-11	LEC	Best practices (part II)	DV-10	17-Sep-19, 22-Oct-19, 10-Dec-19, 14-Jan-20, 25-Feb-20, 07-Apr-20
DV-12	LAB	Bring your own data	DV4 or DV-11	17-Dec-19, 07-Apr-20, 14-Apr-20

Machine Learning 101: 8 micro-training sessions (5 LEC + 3 LAB; 3 hours each)

Code	Type	Description	(Suggested) Prerequisites	Dates (select 1 of)
ML-1	LEC	Association rules [‡]	DAB-1, 3, 5	03-Oct-19, 02-Apr-20
ML-2	LAB	Association rules	ML-1	10-Oct-19, 09-Apr-20
ML-3	LEC	Clustering overview; <i>k</i> -means [‡]	DAB-1, 3, 5	16-Oct-19, 13-Feb-20
ML-4	LEC	Hierarchical; issues and challenges [‡]	ML-3	23-Oct-19, 20-Feb-20
ML-5	LAB	Clustering	ML-4	30-Oct-19, 27-Feb-20
ML-6	LEC	Classification overview; decision trees [‡]	DAB-1, 3, 5	07-Nov-19, 11-Mar-20
ML-7	LEC	Naïve Bayes; issues and challenges [‡]	ML-6	14-Nov-19, 18-Mar-20
ML-8	LAB	Classification	ML-7	21-Nov-19, 25-Mar-20

Micro-Training Sessions ^[‡: matériel également disponible en français]

Focus on Supervised & Unsupervised Learning: 8 micro-training sessions (6 LEC + 2 LAB; 3 hrs each)

Code	Type	Description	(Suggested) Prerequisites	Dates (select 1 of)
UL-1	LEC	DBSCAN; spectral clustering	ML-3, 4	06-Nov-19, 05-Mar-20
UL-3	LEC	Expectation-maximization; latent Dirichlet allocation	ML-3, 4	13-Nov-19, 12-Mar-20
UL-5	LEC	Ensembles clustering; fuzzy clustering; validation	ML-3, 4	20-Nov-19, 19-Mar-20
UL-6	LAB	Clustering	ML-5, UL-5	27-Nov-19, 26-Mar-20
SL-1	LEC	Logistic regression; value estimation	ML-6, 7	28-Nov-19, 01-Apr-20
SL-3	LEC	Support vector machines; neural networks [‡]	ML-6, 7	05-Dec-19, 08-Apr-20
SL-5	LEC	Rare occurrences; ensemble learning; boosting methods; evaluation	ML-6, 7	12-Dec-19, 15-Apr-20
SL-6	LAB	Classification	ML-8, SL-5	19-Dec-19, 22-Apr-20

Text Mining and Natural Language Processing: 10 micro-training sessions (6 LEC + 4 LAB; 3 hours each)

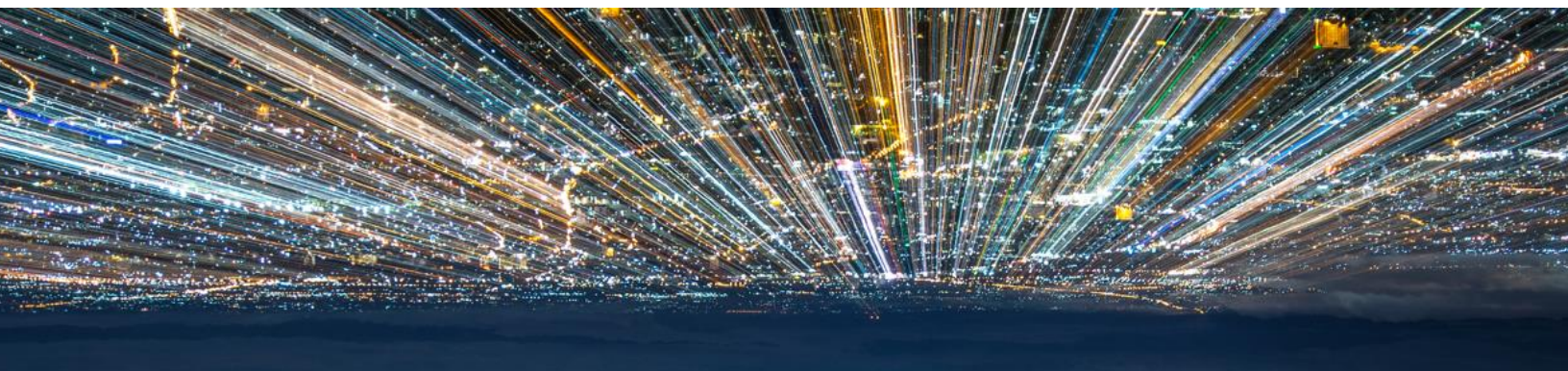
Code	Type	Description	(Suggested) Prerequisites	Dates (select 1 of)
TM-1	LEC	Text processing [‡]	DAB-1, 3	08-Jan-20
TM-2	LAB	Building a lexicon	TM-1	05-Sep-19
TM-3	LEC	Text mining basics; sentiment analysis [‡]	TM-1	15-Jan-20
TM-4	LAB	Sentiment analysis	TM-3	22-Jan-20
TM-5	LAB	Text visualizations	TM-1	12-Sep-19
NLP-1	LEC	Natural language processing basics	TM-1	25-Mar-20
NLP-2	LEC	Natural language processing for French	NLP-1	19-Sep-19
NLP-3	LEC	Natural language processing tasks	NLP-1	26-Sep-19, 01-Apr-20
NLP-4	LEC	Topic modeling I	NLP-3	03-Oct-19, 08-Apr-20
NLP-5	LAB	Topic modeling II	NLP-4	10-Oct-19

Learning by Doing: 16 micro-training sessions (16 LAB; 3 hrs each; all sessions in a series must be chosen)

Code	Type	Description	(Suggested) Prerequisites	Dates (select 1 of)
LBD-1	LAB	A machine learning capstone project I	ML-1 to 8	16-Jan-20
LBD-2	LAB	A machine learning capstone project II	LBD-1	23-Jan-20
LBD-3	LAB	A machine learning capstone project III	LBD-2	30-Jan-20
LBD-4	LAB	A machine learning capstone project IV	LBD-3	06-Feb-20
LBD-5	LAB	A text mining project from A to Z I	TM-1, 3, 4	04-Sep-19, 29-Jan-20
LBD-6	LAB	A text mining project from A to Z II	LBD-5	11-Sep-19, 05-Feb-20
LBD-7	LAB	A text mining project from A to Z III	LBD-6	18-Sep-19, 12-Feb-20
LBD-8	LAB	A text mining project from A to Z IV	LBD-7	25-Sep-19, 19-Feb-20
LBD-9	LAB	A data science pipeline I	DAB-1 to 8	02-Apr-20
LBD-10	LAB	A data science pipeline II	LBD-9	09-Apr-20
LBD-11	LAB	A data science pipeline III	LBD-10	16-Apr-20
LBD-12	LAB	A data science pipeline IV	LBD-11	23-Apr-20
PAT-1 to 4	LAB	Putting it all together I, II, III, IV	*	By request

Miscellaneous: 6 micro-training sessions (6 LAB; 3 hours each) + open lab sessions (by subscription only)

Code	Type	Description	(Suggested) Prerequisites	Dates (select 1 of)
MI-1	LAB	Genetic algorithms	N/A	09-Jan-20, 20-Feb-20
MI-2	LAB	The semantic web	N/A	13-Feb-20, 16-Apr-20
MI-3	LAB	Optimization	N/A	By request
MI-4	LAB	Synthetic data and simulations	N/A	23-Apr-20, 09-Oct-19
MI-5	LAB	Self-organizing maps	N/A	26-Feb-20
MI-6	LAB	Uniform manifold approximation & projection	N/A	19-Dec-19
DLB	LAB	Open data lab (by subscription only)	N/A	10-Sep-19, 24-Sep-19, 08-Oct-19, 22-Oct-19, 05-Nov-19, 19-Nov-19, 03-Dec-19, 17-Dec-19, 07-Jan-20, 21-Jan-20, 04-Feb-20, 18-Feb-20, 03-Mar-20, 17-Mar-20, 31-Mar-20, 14-Apr-20



Micro-Training Sessions ^[‡: matériel également disponible en français]

Special Topics in AI/ML/DS: 24 micro-training sessions (14 LEC + 10 LAB; 3 hours each; * = advanced)

Code	Type	Title	(Suggested) Prerequisites	Dates (select 1 of)
BD-1	LEC	A big data adventure	ML-1 to 8	By request
BD-2	LAB	A big data adventure	BD-1	By request
DL-1	LEC	Introduction to deep learning	ML-3 to 8	21-Nov-19
DL-2	LEC	Introduction to deep learning	DL-1	By request
DL-3	LAB	Introduction to deep learning	DL-2	28-Nov-19
DSS-1	LEC	Data science with streams	ML-1 to 8	26-Feb-20
DSS-2	LAB	Data science with streams	DSS-1	04-Mar-20
WS-1	LEC	Web scraping	DAB-3, 11	15-Apr-20
WS-2	LEC	Web scraping	WS-1	By request
WS-3	LAB	Web scraping	WS-2	22-Apr-20
RS-1	LEC	Recommender systems	ML-1 to 8	17-Oct-19
RS-2	LAB	Recommender systems	RS-1	24-oct-19
BDA-1	LEC	Bayesian data analysis*	N/A	05-Dec-19
BDA-2	LEC	Bayesian data analysis*	BDA-1	By request
BDA-3	LAB	Bayesian data analysis*	BDA-2	12-Dec-19
AD-1	LEC	Anomaly detection	ML-1 to 8	02-Oct-19
AD-2	LAB	Anomaly detection	AD-1	09-Oct-19
SNA-1	LEC	Social network analysis*	N/A	04-Dec-19
SNA-2	LEC	Social network analysis*	SNA-1	By request
SNA-3	LAB	Social network analysis*	SNA-2	11-Dec-19
RD-1	LEC	Reporting and deployment	N/A	16-Oct-19
RD-2	LAB	Reporting and deployment	RD-1	23-Oct-19
FS-1	LEC	Feature selection and data reduction*	ML-3 to ML-8	By request
FS-2	LAB	Feature selection and data reduction*	FS-2	By request

Bootcamps: 10 micro-training sessions (10 LAB; 3 hours each)

Code	Type	Description	(Suggested) Prerequisites	Dates (select 1 of)
BC-1	LAB	Programming I	N/A	04-Dec-19
BC-2	LAB	Programming II	BC-1	18-Dec-19
BC-3	LAB	Programming III	BC-2	By request
BC-4	LAB	Programming IV	BC-3	By request
BC-5	LAB	Programming V	BC-4	By request
BC-6	LAB	Programming VI	BC-5	By request
BC-7	LAB	Mathematics/Statistics I [‡]	N/A	11-Dec-19
BC-8	LAB	Mathematics/Statistics II	BC-7	18-Dec-19
BC-9	LAB	Mathematics/Statistics III	BC-8	By request
BC-10	LAB	Mathematics/Statistics IV	BC-9	By request

Advanced Training Calendar – Fall '19

		Sep '19						
		S/D	M/L	Tu/M	W/M	Th/J	F/V	S/S
AM	1	2	3	4	5	6	7	
PM			DV-7	DAB-2	DAB-1			
AM	8	9	10	11	12	13	14	
PM			DV-10	LBD-5	TM-2			
AM	15	16	17	18	19	20	21	
PM			DAB-6	DAB-3	DAB-4			
AM	22	23	24	25	26	27	28	
PM			DLB	LBD-6	TM-5			
AM	29	30						
PM			DAB-11	DAB-9	DAB-5			
AM			DV-11	LBD-7	NLP-2			
PM			DAB-7	DAB-10	DV-1			
AM			DLB	LBD-8	NLP-3			

		Oct '19						
		S/D	M/L	Tu/M	W/M	Th/J	F/V	S/S
AM				1	2	3	4	5
PM				DAB-8	DAB-12	NLP-4		
AM	6	7	8	9	10	11	12	
PM			DV-8	AD-1	ML-1			
AM	13	14	15	16	17	18	19	
PM			DLB	AD-2	ML-2			
AM	20	21	22	23	24	25	26	
PM			DV-10	RD-1	DV-3			
AM	27	28	29	30	31			
PM			DV-7	ML-3	RS-1			
AM			DV-11	RD-2	DV-4			
PM			DLB	ML-4	RS-2			
AM			DV-8	DAB-2	DAB-1			
PM			DV-9	ML-5	DV-5			

		Nov '19						
		S/D	M/L	Tu/M	W/M	Th/J	F/V	S/S
AM						1	2	
PM								
AM	3	4	5	6	7	8	9	
PM			DAB-6	DAB-3	DAB-4			
AM	10	11	12	13	14	15	16	
PM			DLB	UL-1	ML-6			
AM	17	18	19	20	21	22	23	
PM			DAB-11	DAB-9	DAB-5			
AM	24	25	26	27	28	29	30	
PM			DV-7	UL-3	ML-7			
AM			DAB-7	DAB-10	DL-1			
PM			DLB	UL-5	ML-8			
AM			DAB-8	DAB-12	DL-3			
PM			DV-8	UL-6	SL-1			

		Dec/Déc '19						
		S/D	M/L	Tu/M	W/M	Th/J	F/V	S/S
AM	1	2	3	4	5	6	7	
PM			DV-10	SNA-1	BDA-1			
AM	8	9	10	11	12	13	14	
PM			DLB	BC-1	SL-3			
AM	15	16	17	18	19	20	21	
PM			DV-11	SNA-3	BDA-3			
AM	22	23	24	25	26	27	28	
PM			DV-9	BC-7	SL-5			
AM	29	30	31					
PM			DV-12	BC-2	MI-6			
AM			DLB	BC-8	SL-6			

- DAB Data Science Basics
- DV Data Visualization
- ML Machine Learning 101
- LBD Learning by Doing
- BC Bootcamps
- DLB Open Data Labs
- TM/NLP Text Mining and Natural Language Processing
- UL/SL Focus on Supervised and Unsupervised Learning
- ST Special Topics
- MI Miscellaneous

Advanced Training Calendar – Winter '20

		Jan '20						
		S/D	M/L	Tu/M	W/M	Th/J	F/V	S/S
AM	PM				1	2	3	4
AM	PM	5	6	DV-10 DLB	DAB-1 TM-1	DAB-2 MI-1		11
AM	PM	12	13	DAB-6 DV-11	DAB-4 TM-3	DAB-3 LBD-1		18
AM	PM	19	20	DAB-11 DLB	DAB-5 TM-4	DAB-9 LBD-2		25
AM	PM	26	27	DAB-7 DV-7	DV-1 LBD-5	DAB-10 LBD-3		

		Feb/Fév '20						
		S/D	M/L	Tu/M	W/M	Th/J	F/V	S/S
AM	PM							1
AM	PM	2	3	DAB-8 DLB	DV-3 LBD-6	DAB-12 LBD-4		8
AM	PM	9	10	DV-8 DV-9	DV-4 LBD-7	MI-2 ML-3		15
AM	PM	16	17	DV-10 DLB	DV-5 LBD-8	MI-1 ML-4		22
AM	PM	23	24	DV-11 DV-7	MI-5 DSS-1	DAB-2 ML-5		29

		Mar '20						
		S/D	M/L	Tu/M	W/M	Th/J	F/V	S/S
AM	PM	1	2	DAB-6 DLB	DAB-1 DSS-2	DAB-3 UL-1		7
AM	PM	8	9	DAB-11 DV-8	DAB-4 ML-6	DAB-9 UL-3		14
AM	PM	15	16	DAB-7 DLB	DAB-5 ML-7	DAB-10 UL-5		21
AM	PM	22	23	DAB-8 DV-9	NLP-1 ML-8	DAB-12 UL-6		28
AM	PM	29	30	DV-10 DLB				

		Apr/Avr '20						
		S/D	M/L	Tu/M	W/M	Th/J	F/V	S/S
AM	PM				1	2	3	4
AM	PM				NLP-3 SL-1	LBD-9 ML-1		
AM	PM	5	6	DV-11 DV-12	NLP-4 SL-3	LBD-10 ML-2		11
AM	PM	12	13	DV-12 DLB	WS-1 SL-5	LBD-11 MI-2		18
AM	PM	19	20		WS-3 SL-6	LBD-12 MI-4		25
AM	PM	26	27					

DAB Data Science Basics	TM/NLP Text Mining and Natural Language Processing
DV Data Visualization	
ML Machine Learning 101	UL/SL Focus on Supervised and Unsupervised Learning
LBD Learning by Doing	
BC Bootcamps	ST Special Topics
DLB Open Data Labs	MI Miscellaneous

Founders / Lead Instructors



Jennifer Schellinck is passionate about bringing cutting-edge data technology to organizations wanting to develop the best analysis and decisions. She applies the latest machine-learning and systems-modelling techniques to help organizations achieve their greater potential.

Jennifer's machine learning and simulation expertise comes from her background in Cognitive Science, earning a Ph.D. in 2009. As an Adjunct Professor at Carleton University, she remains active in academia and keeps up-to-date on current research. She has been offering data-based workshops since 2015.

She founded **Sysabee** in 2012 and is the founding member of the **Data Science Experts Group**, an association of specialists who customize data-driven solutions for each client.



Patrick Boily is interested in the application of mathematics/statistics to evidence-based decision support. He has worked on 25+ such projects since 2008, first as a public servant, then as a quantitative consultant for Carleton University, and later through his company **Idlewyld Analytics and Consulting Services**.

Patrick is fully bilingual and has taught over 40 university courses in mathematics, statistics, data analysis, machine learning, and quantitative consulting. He has been leading workshops and training courses on data analysis/machine learning since 2015.

He has extensive experience in data science, machine learning, A.I. and predictive analytics, data cleaning, data visualization, queueing systems, stochastic modelling, and simulations – managing and being involved in numerous projects in these subject areas from inception to completion.



Stephen Davies is the CEO of **DAVHILL Group**, a business intelligence and data analytics company based in Ottawa, Ontario, specializing in the implementation of Business Intelligence, Artificial Intelligence, and Machine Learning Systems. At DAVHILL, Stephen's main focus is to make data real and useable for everybody.

Steven has more than 25 years of experience working in both public and private sectors. With an academic background in Physics and Engineering, he has worked in semiconductor and OEM manufacturing as an engineer and supply chain director.

Early in his career in operations management, he started to do data analysis and never quite escaped. As a Business Intelligence and Process Transformation consultant he is delighted to provide training courses to the Data Action Lab.



DAL instructors have consulted for (and taught to participants from) a variety of groups, a selection of which is shown below:

- Canada Revenue Agency
- Canada School of Public Service's Digital Academy
- Canadian Air Transport Security Authority
- Canadian Coast Guard
- Canadian Food Inspection Agency
- Canadian Institute for Health Information
- The Children's Hospital of Eastern Ontario
- Communications Research Centre Canada
- Department of National Defence
- Environment and Climate Change Canada
- Fisheries and Ocean Canada
- Health Canada
- Immigration, Refugees and Citizenship Canada
- Indigenous and Northern Affairs Canada
- Natural Resources Canada
- Nuclear Waste Management Organization
- Office of the Privacy Commissioner of Canada
- Privy Council Office
- Public Services and Procurement Canada
- Royal Canadian Mounted Police
- Transport Canada
- Treasury Board Secretariat

Consult our **Data Champion Training Catalogue** for a list of practical data leadership courses.

Visit data-action-lab.com or contact info@data-action-lab.com for more information.

