Module 2 :

Deep Networks

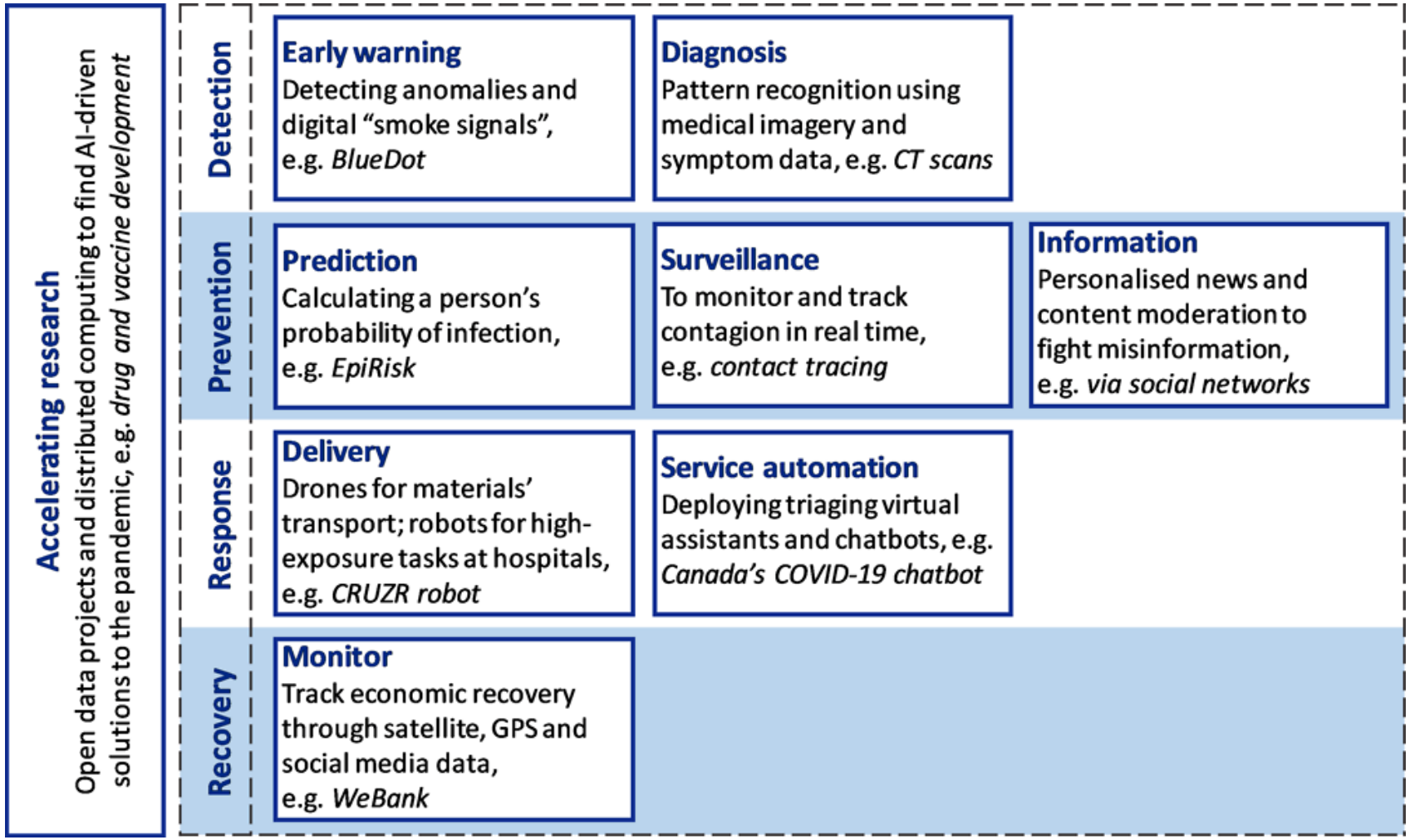
State-of-the-Art Machine Learning

Géraldine Conti, August 2020

Discussion Session

- Review of Notebooks 7.1 and 7.2:
  - Text generation with RNN (7.1) :
    - Text vectorization
    - GRU cells
    - Model training and prediction
  - Time series forecasting (7.2) :
    - univariate time series
    - Multivariate time series
    - Single/multiple step model

Covid-19 Machine Learning



State-of-the-Art Methods

State-of-the-art (2017-2018, from video)

	Subject/algorithm	Video time	Participant
1	BERT applications	11:25 – 14:00	Binder Gerhard
2	Tesla Autopilot Hardware v2+ : NN at scale	14:00 – 16:28	Bodmer André
3	AdaNet : AutoML with Ensembles	16:28 – 18.30	Ciullo Alessio
4	AutoAugment : Deep RL Data Augmentation	18:30 – 22:50	Desilvestro Valentino
5	Training Deep Networks with Synthetic Data	22:50 – 24:29	Freunek Michael
6	Segmentation Annotation with Polygon-RNN++	24:29 – 26:34	Gomez Chamorro Andrea
7	DAWNBench : Training Fast and Cheap	26.34 – 29:05	Janicek Radoslav
8	BigGAN : state of the art in image synthesis	29:05 – 30:11	Nikolayeva Tatyana
9	Video-to-video synthesis	30:11 – 32:12	Sandow Malte
10	Semantic segmentation (object detection)	32:12 – 33:38	Schneider Christa
11	Symmetric semantic segmentation	33:38 – 36:00	Sigrist Christine
12	AlphaGO	36:00 – 37.23	Vasconcelos Ivo
13	AlphaZero	37:23 – 40:38	Vaudroz Tamara
14	OpenAI Five	40:38 – 43:27	Wieland Fluri Anton Martin
15	Deep Learning Frameworks	43:27 – 46.24	Zeller Marcel

State-of-the-art (from 2019 conference)

Area	State-of-the-art algorithms
Image classification	VGG, AlexNet, InceptionV3
Object detection	Faster R-CNN, Yolo9000, YoloV2
Semantic segmentation	Mask-R-CNN, SSD
Speech recognition	DeepSpeech2
Translation	Seq2se1, Transformer
Sentiment analysis	Seq-CNN
Recommender system	NCF
Game play	MiniGo, DeepQ, A3C
Generative model	Biggan