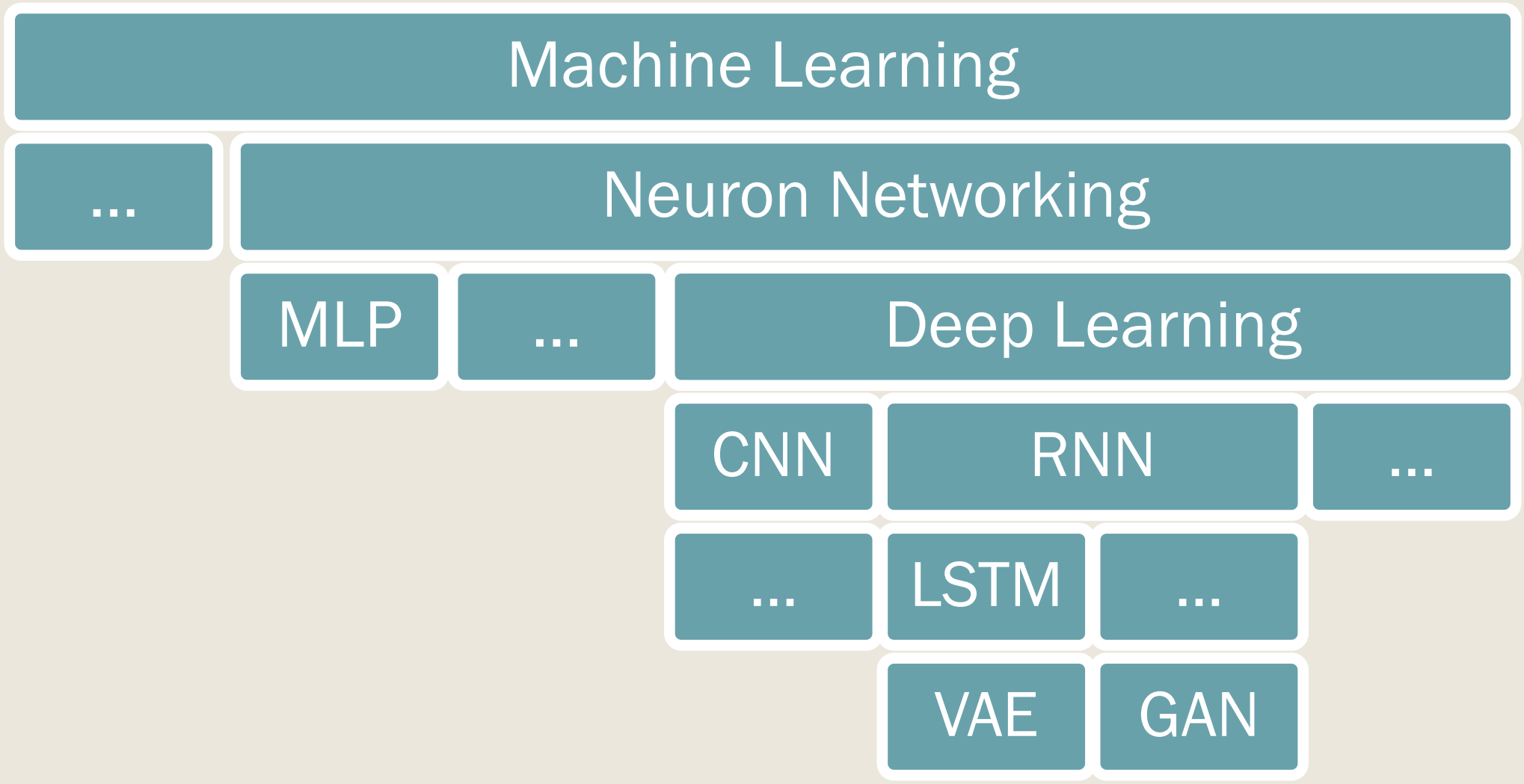
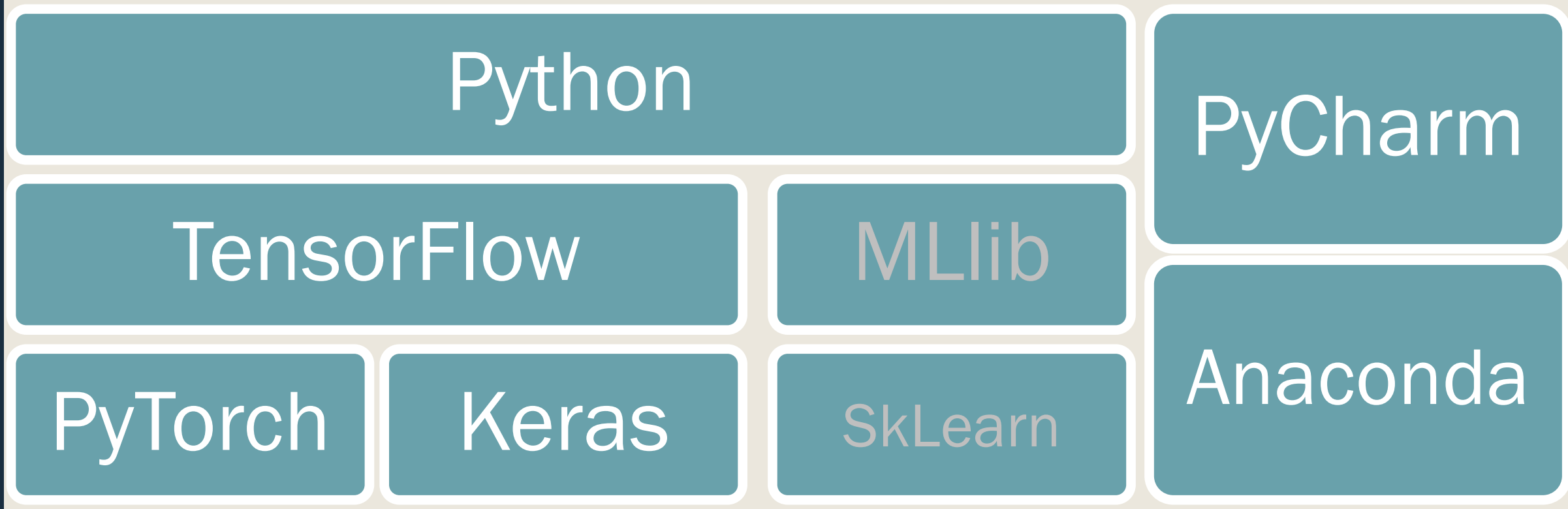
THE ROUTE TO DEEP LEARNING

适用于项目驱动型的深度学习参考学习路径

Model hierarchy



Tech hierarchy



From Machine Learning

- Project orientated courses:
  - *[Andrew Ng] Machine Learning:* *https://www.bilibili.com/video/BV164411b7dx*
    Overviewed and quick-lamed for heated ML
  - *[Andrew Ng] DeepLearning.ai:* *https://www.bilibili.com/video/BV1gb411j7Bs*
    Specific for Deep Learning
    - Begin with a neuron; End at an implement
    - Case by case; Model by model;
    - Helpful source including hand-writing notes, codes, datasets…

From Machine Learning

- Algorithm oriented course:
  - *[Hungyi Lee] Machine Learning:* *https://www.bilibili.com/video/BV1JE411g7XF*

    Algo by algo

    almost covers all the useful ML algorithms

    starter low but terminal high

    course long but with fun
  - *[Hungyi Lee] Machine Learning addition(or advanced):* *https://www.bilibili.com/video/BV1Gb411n7dE*

    regard as an addition of the former

To Model

- Documents DOCs
- Implement course videos from BiliBili or YouTube
- Articles in the CSDN like Blogsites
- Educational platform
  - *https://machinelearningmastery.com/*
  - *https://www.machinecurve.com/*

To Model
take **Machine Learning Mastery as an e.g.**

- Brief description of TensorFlow: https://machinelearningmastery.com/introduction-python-deep-learning-library-tensorflow/
- Keras: https://machinelearningmastery.com/introduction-python-deep-learning-library-keras/
- First NN with Keras: https://machinelearningmastery.com/tutorial-first-neural-network-python-keras/
- Time Series with LSTM(RNN): https://machinelearningmastery.com/time-series-prediction-lstm-recurrent-neural-networks-python-keras/
- Go further with LSTM:
  - ***Stacked LSTM:*** *https://machinelearningmastery.com/stacked-long-short-term-memory-networks/*
  - ***Encoder-Decoder LSTM:*** *https://machinelearningmastery.com/encoder-decoder-long-short-term-memory-networks/*

To Model
take **Machine Learning Mastery as an e.g.**

- Prediction:
  - Multi-step *Time Series*: *https://machinelearningmastery.com/multi-step-time-series-forecasting-with-machine-learning-models-for-household-electricity-consumption/*
  - *With LSTM: https://machinelearningmastery.com/how-to-develop-lstm-models-for-time-series-forecasting/*
- GAN:
  - *Intro to GANs: https://machinelearningmastery.com/what-are-generative-adversarial-networks-gans/*
  - *Algo of GANs: https://machinelearningmastery.com/tour-of-generative-adversarial-network-models/*
  - *Build your first GANs: https://machinelearningmastery.com/how-to-get-started-with-generative-adversarial-networks-7-day-mini-course/*
  - *Implement with GANs: https://machinelearningmastery.com/how-to-develop-a-generative-adversarial-network-for-an-mnist-handwritten-digits-from-scratch-in-keras/*

To Model
take **MachineCurve as an e.g.**

- VAE:
  - *Intro to VAE: https://www.machinecurve.com/index.php/2019/12/24/what-is-a-variational-autoencoder-vae/*
  - *Implement of VAE: https://www.machinecurve.com/index.php/2019/12/30/how-to-create-a-variational-autoencoder-with-keras/*

THANK YOU AND WITH MY PLEASURE

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