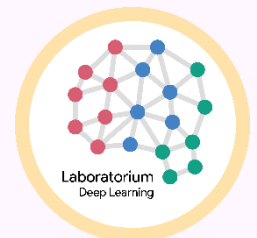


Teknologi Deep Learning



Machine
Learning
Course

Dr. Andreas Hadiyono, ST, MMSI



16/02/2019



Machine Learning



Deep Learning Language Programming





theano



PYTORCH

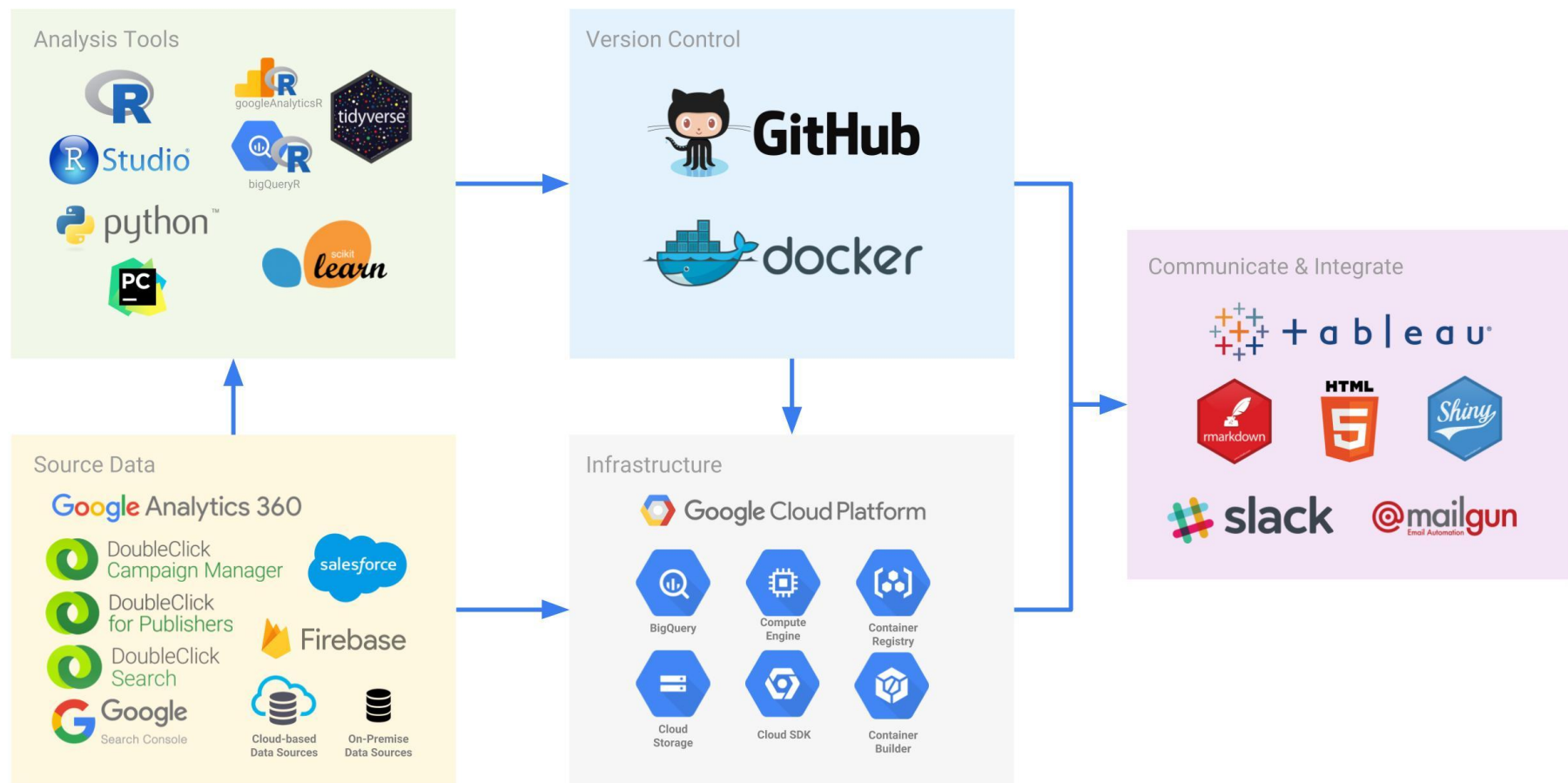
dmlc
mxnet



NVIDIA POWERS DEEP LEARNING

Every major DL framework leverages NVIDIA SDKs





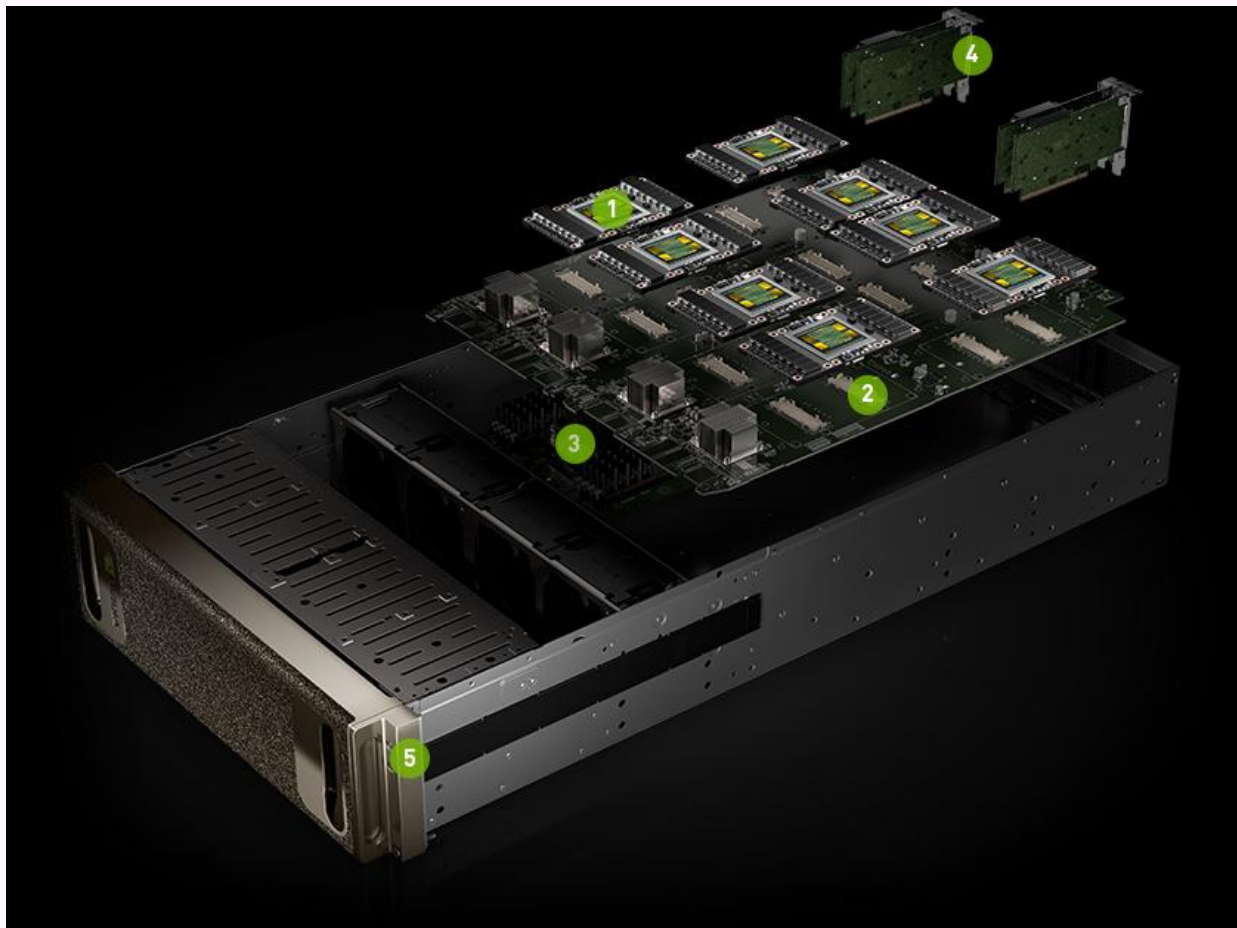


TensorFlow in One Slide

- **What is it:** Deep Learning Library (*and more*)
 - **Facts:** Open Source, Python, Google
 - **Community:**
 - 117,000+ GitHub stars
 - TensorFlow.org: Blogs, Documentation, DevSummit, YouTube talks
 - **Ecosystem:**
 - **Keras:** high-level API
 - **TensorFlow.js:** in the browser
 - **TensorFlow Lite:** on the phone
 - **Colaboratory:** in the cloud
 - **TPU:** optimized hardware
 - **TensorBoard:** visualization
 - **TensorFlow Hub:** graph modules
 - **Alternatives:** PyTorch, MXNet, CNTK
- Extras:**
 - Swift for TensorFlow
 - TensorFlow Serving
 - TensorFlow Extended (TFX)
 - TensorFlow Probability
 - Tensor2Tensor



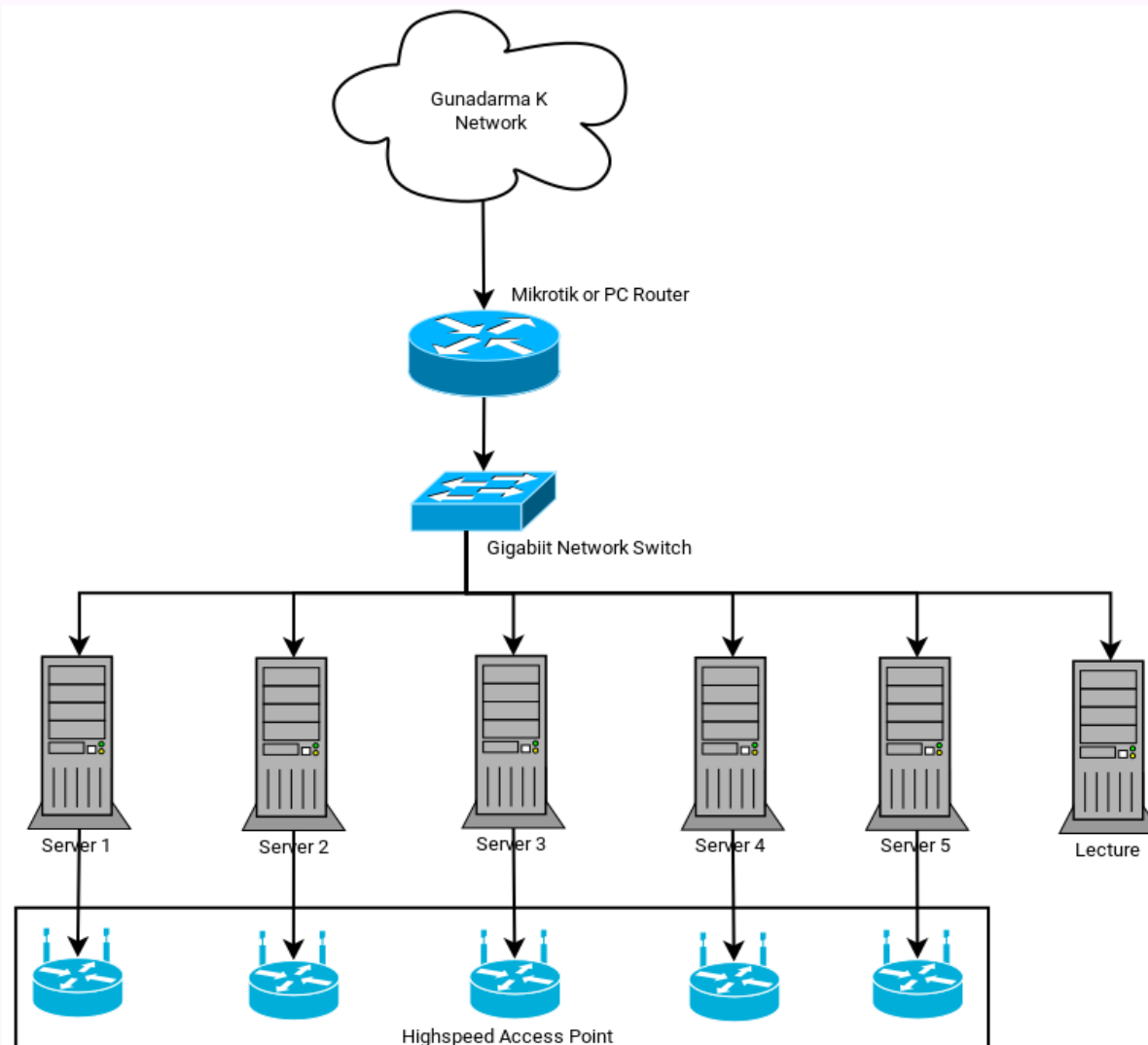
Teknologi

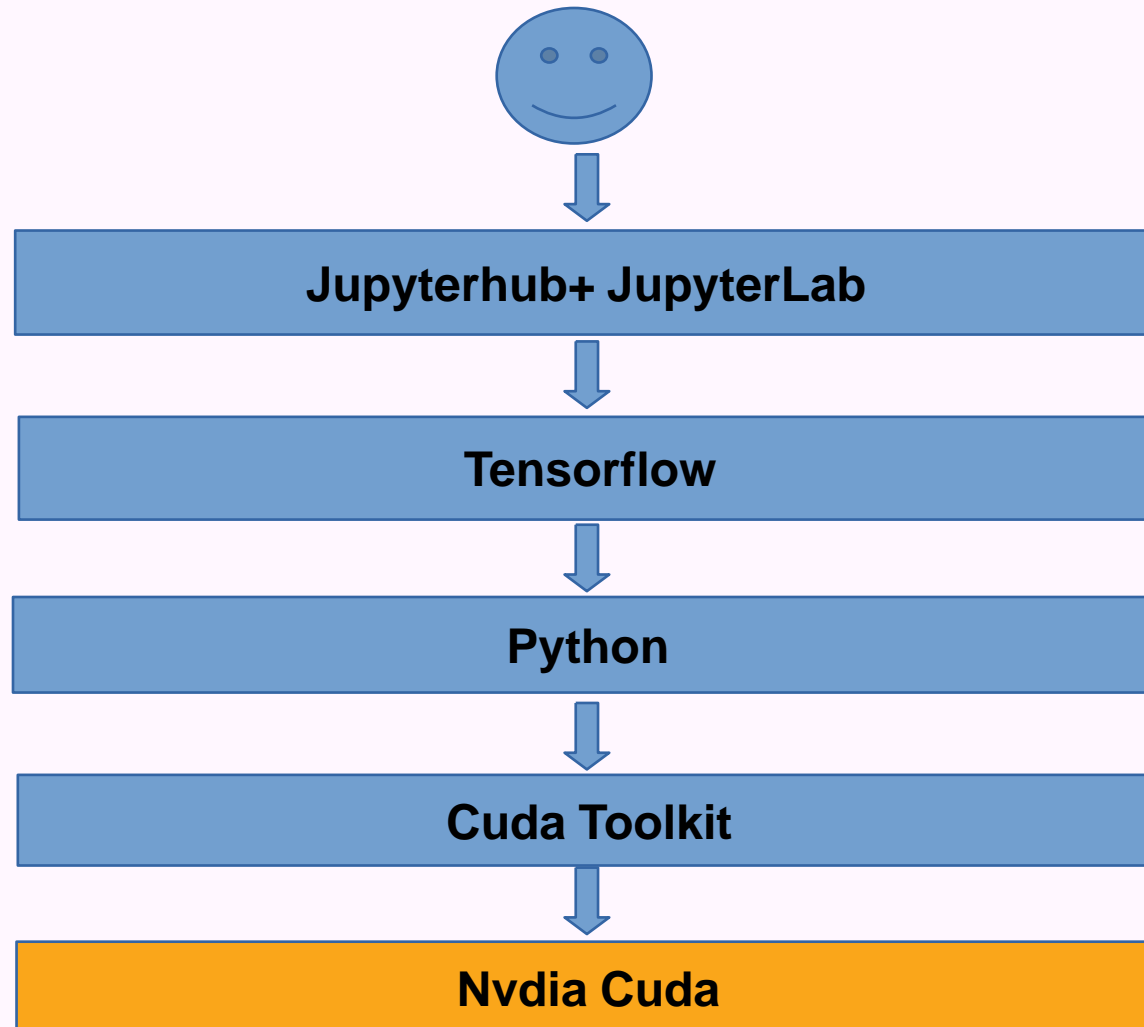






Lab Infrastructure





- Linux Operating System : Leap Opensuse 42.3
- Nvidia Graphic Card:
 - Nvdia Graphic Card GTX 1070 ti
- Programming Language
 - Anaconda 3
 - Python 3

Environment and Deep Learning

- Environment
 - pip,
 - ipython,
 - jupyterhub,
 - Jupyter lab
- Numeric
 - NumPy
 - SciPy
 - Scikit-learn,
 - pandas,
- Deep Learning
 - tensorflow
 - keras,
 - theano,

Visualisasi dan NLP

- **Untuk Visualisasi**
 - matplotlib,
 - seaborn,
 - plotly,
 - Pillow
- **Untuk NLP**
 - Gensim ,
 - Nltk
 - Spacy



TERIMA KASIH