

Scientific activities

Nabiz Rahpoe

2007-2021

Diploma @ Univ. Göttingen 2005-2006

- Novae GK Persei
- Hubble Space Telescope images
- Distance of the system
- Motion of the gas clumps

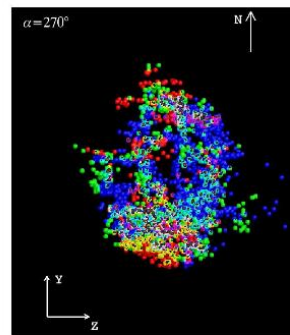
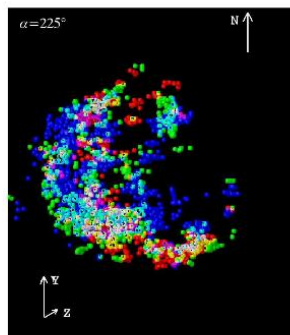
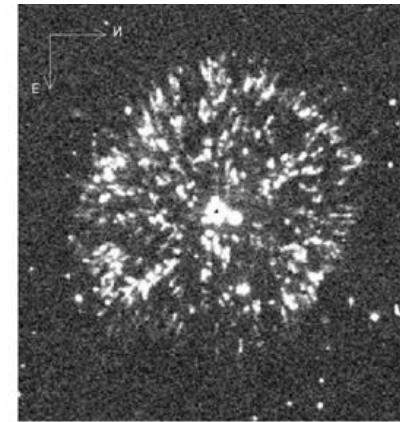


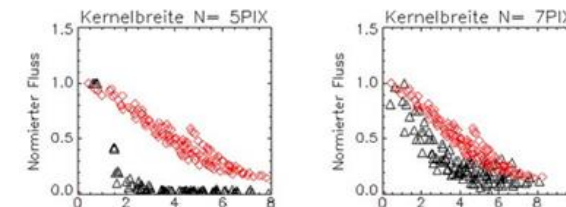
Abbildung 9.2: 3D Bilder der GK Persei Hülle mit den Laufzeiten. Die Farben bedeuten die errechneten Durchgangszeiten der Knoten nach der Explosion. (Blau, Grün, Rot) entspricht $(T < 90, T \approx 90, T > 90)$ Jahre ($D=450$ Pc).



Caption

Abbildung 4.9: Fabry-Perot-Aufnahme des GK Persei Nebels durch Calar-Alto-Teleskop der Stickstoff N[II]-Linie. Norden nach rechts und Osten nach oben.

This figure was uploaded by Nabiz Rahpoe
Content may be subject to copyright.



Figure

Caption

Abbildung 6.6: PSF des Sterns bei der Position [448,1155] im FP-Bild und die durch Medianfilter verbreiterte HST-PSF. Die Faltungsbreite von $N=5$ Pix (oben links) bis $N=11$ Pix (unten rechts)

PhD @ IUP Bremen 2007-2010

- Impact of Solar Proton Events (SPE) on Noctilucent clouds (NLC)
- Comparison of SPE & NLC time series and events
- Cross correlation and time lag
- Warming in Mesosphere
- Loss of NLCs at SPE condition at 60% of cases

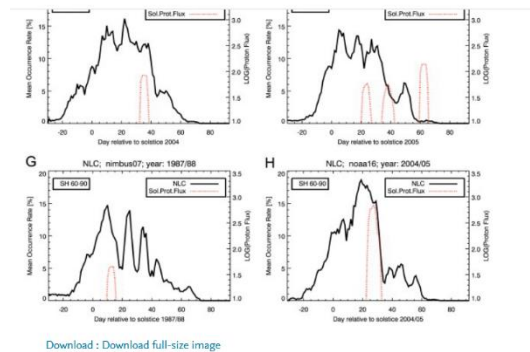
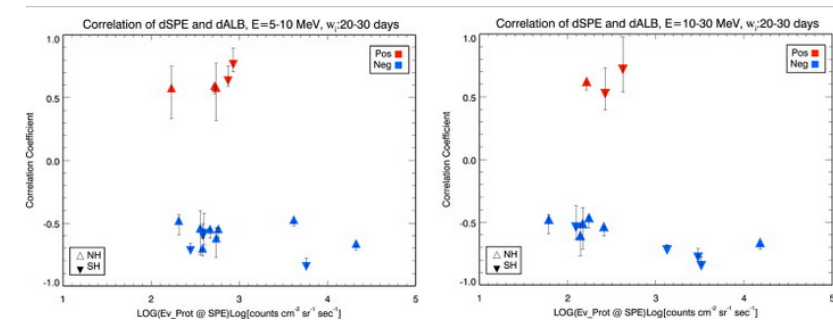


Fig. 2. A–H: Zonally and daily averaged NLC occurrence rate time series smoothed with a 5-day box-car (black line) for NLC seasons with SPEs. The solar proton flux (channel 2: 5–10 MeV) is plotted for the same season (red line) using a logarithmic scale. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

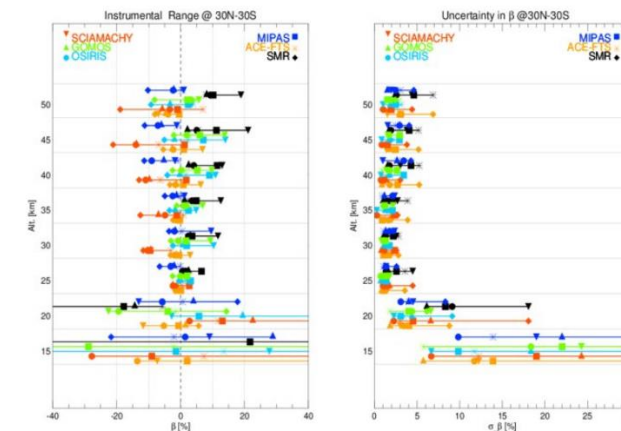
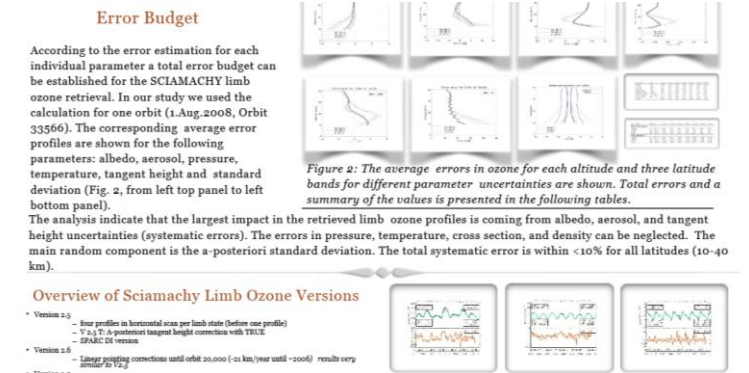


[Download](#) : [Download full-size image](#)

Fig. 10. Scatter plot of \bar{r}_c (correlation coefficient) and proton flux Ev_{prot} for all the SPEs during the NLC core season, for the NLC albedo time series and for proton energy channels 2 (left panel) and 3 (right panel).

Ozone CCI Project @ IUP Bremen 2011-2017

- Phase I
- Error budget of SCIAMACHY ozone limb profiles
- Sensitivity study with SCIATRAN RTM model
- Phase II
- Harmonization of ozone profiles
- Sensor-to-sensor intercomparison & validation



Figure

Caption

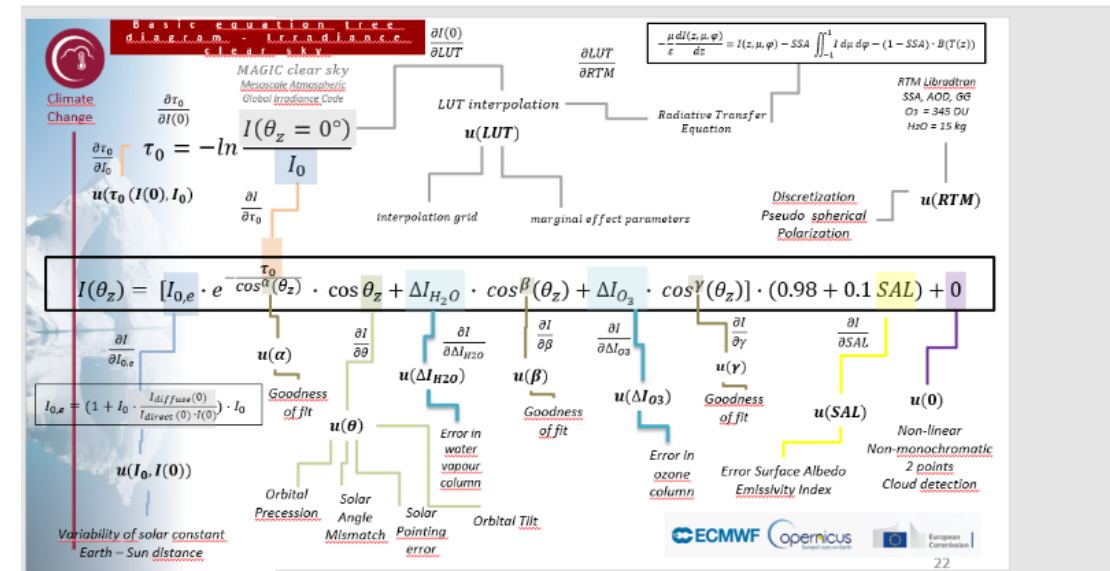
Fig. 5. a) 'Pairwise relative bias' (β) range for all sensors as a function of altitude. Reference sensors are indicated by colour and individual comparison sensors by corresponding symbols. b) Corresponding uncertainties of β .

Available via license: [CC BY 3.0](https://creativecommons.org/licenses/by/3.0/)
Content may be subject to copyright.

Copernicus Climate Change Service @ DWD

Offenbach a.M. 2018-2021

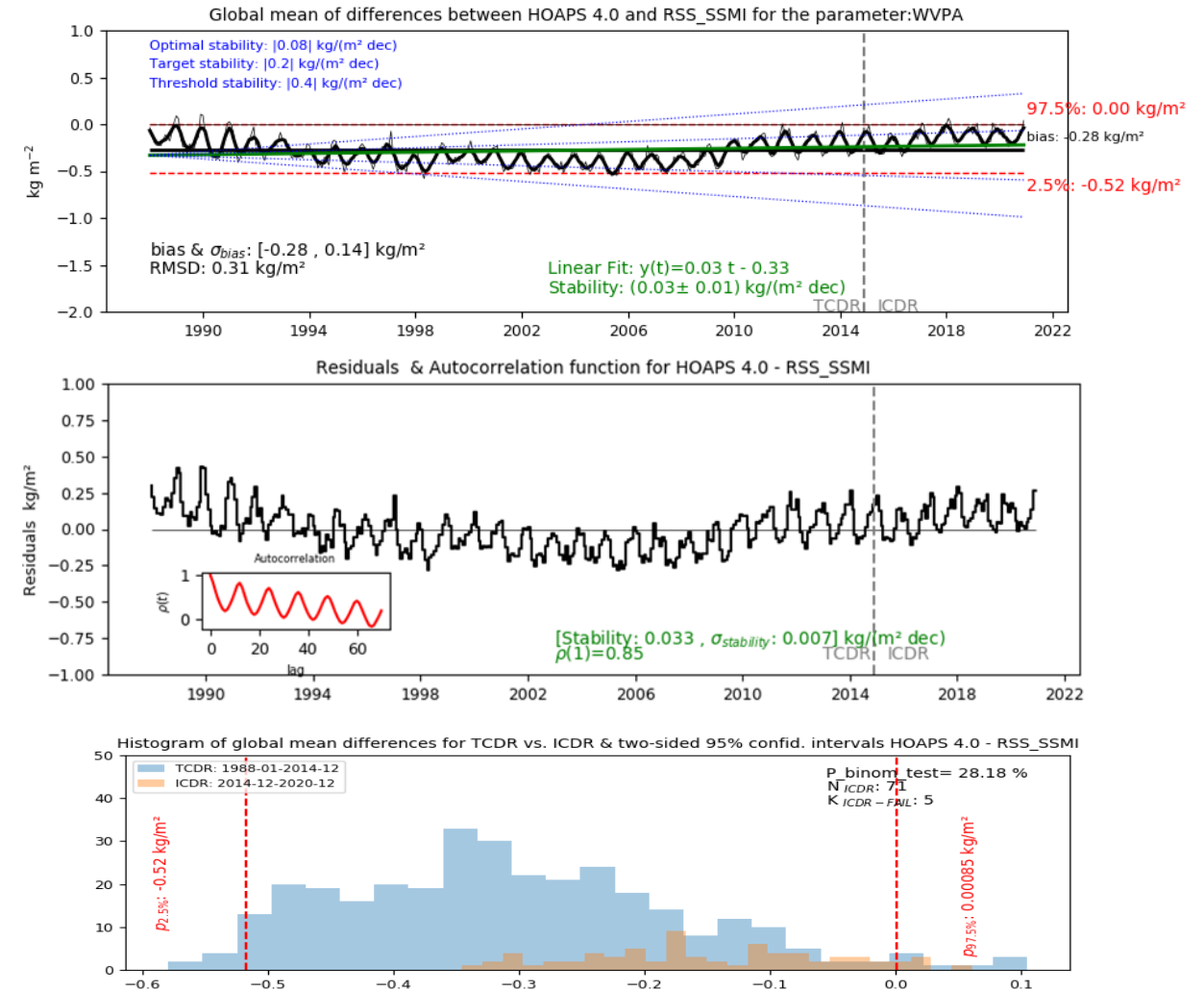
- Quality assessment of surface radiation ECV (Essential Climate Variable)
- Tutorials for water vapour ECVs
- Sensitivity analysis & traceable error source of L2 surface radiation following the methods by BIPM (Bureau International de Poids et Mesurement) & FIDUCEO (Fidelity and Uncertainty in Earth Observations) project



Copernicus Climate Change Service @ DWD

Offenbach a.M. 2018-2021

- Validation and quality assessment of monthly mean total column water vapour product by using statistical methods
- User support for Atmospheric Physics on C3S Climate Data Store
- *Machine learning & AI Google course*



A network diagram with nodes and edges, rendered in brown and gold colors, occupies the left side of the image. The nodes are represented by small circles, and the edges are thin lines connecting them. The diagram is partially obscured by a light blue diagonal shape that covers the right side of the image.

WORKING AS DATA SCIENTIST @CONCEDRO FROM
JULY 2021

DATA SCIENCE

DATA SCIENCE

- Machine Learning with Python:
 - Analysis of unstructured financial data
- Graph Data Science:
 - Link and node prediction of Graph Data, stored as nodes and connected via edges (relation)
- Natural Language Processing NLP:
 - Textanalysis of contract and automatic extraction of content for further processing into excel sheets: Address, Name etc
- Deeplearning Neuronal Networks:
 - Classification of Xray and MRI images for detection of Pneumonia and Alzheimer

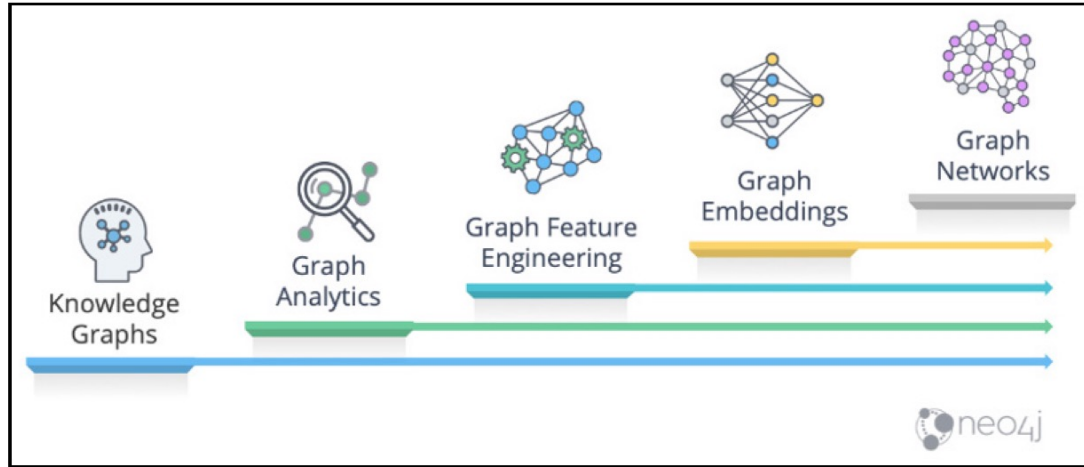
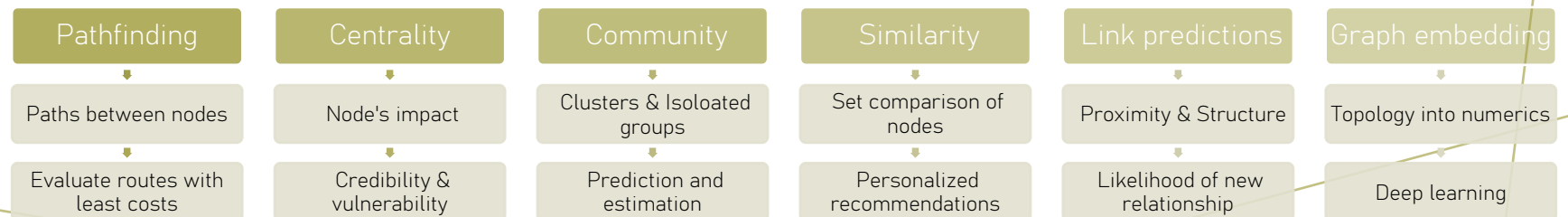


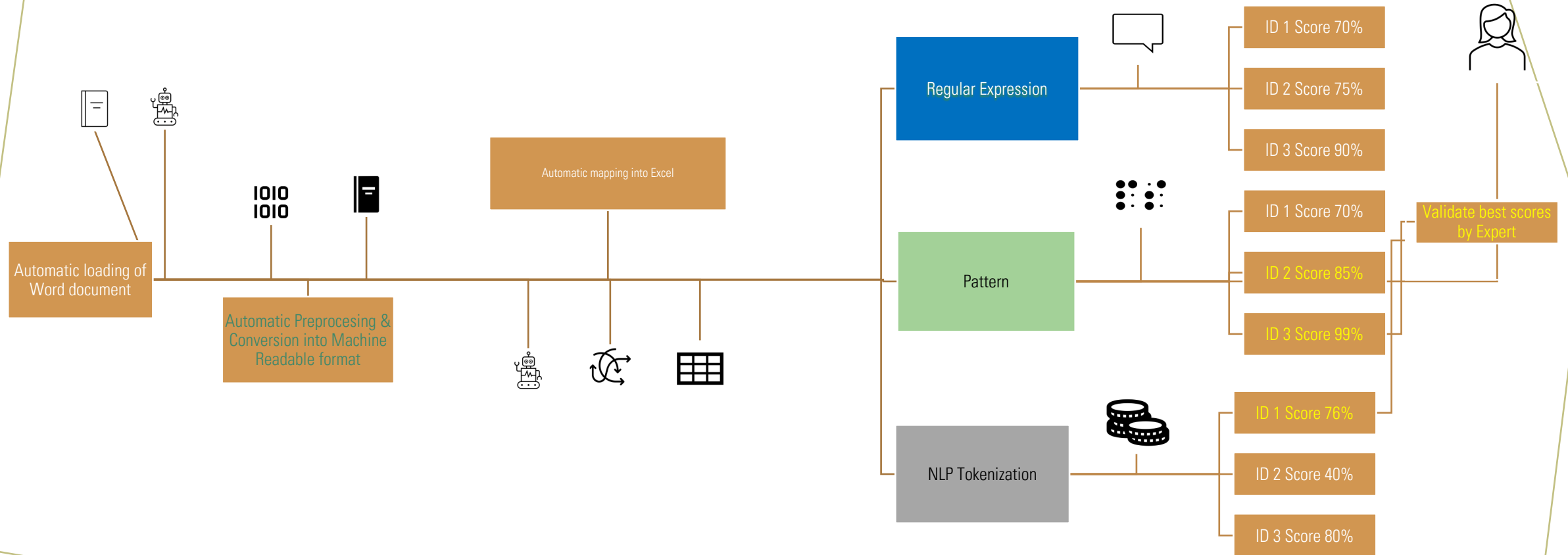
FIGURE 3-1: The GDS journey.

- Knowledge Graphs
- Foundation of GDS
- Streamline workflows & automate responses
- Human understandable form by adding context to apps (AI)
- Graph Analytics
- Understand the business networks
- Clusters, influential nodes & pathways
- Hop (level) queries
- Anormal (non-random) distribution vs random (normal) distribution

APPLICATION OF GDS TECHNOLOGY

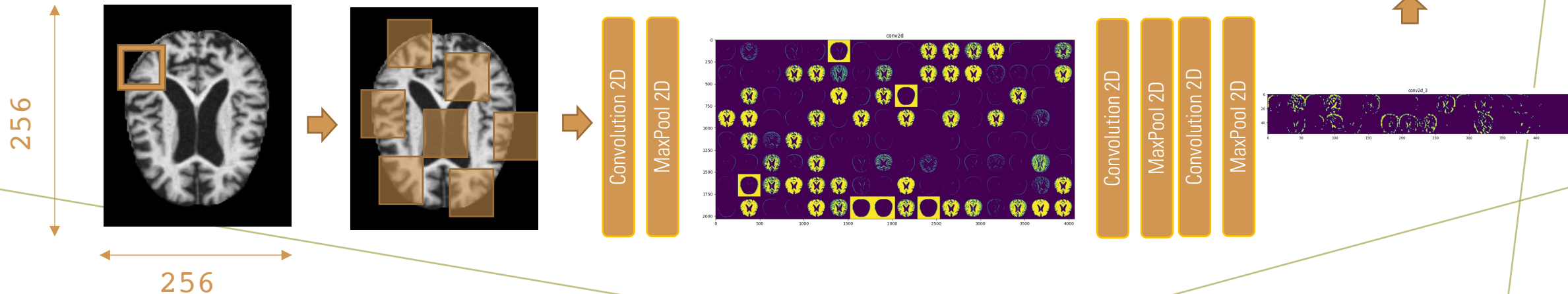
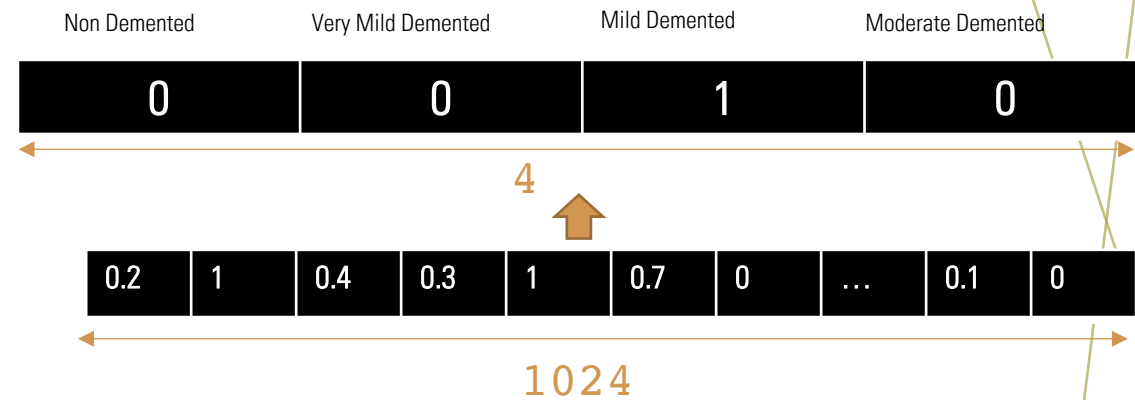


NLP: TEXT ANALYSIS

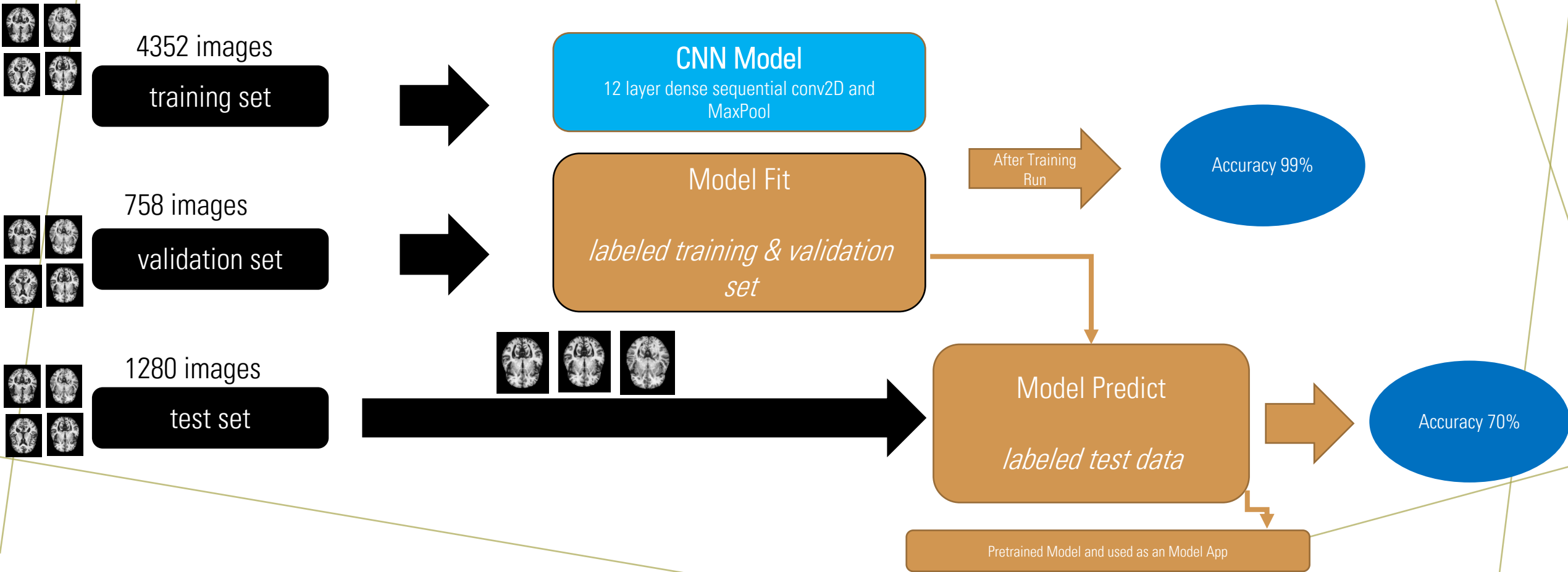


DEEPLearn NEURONAL NETWORKS: ALZHEIMER

- Transformation of an image (256 x 256) into a vector (1 x 1024)
- First step of filtering: convolution of image at 3x3 pixel size
- Second step: Maxpooling or averaging of image at 2x2 pixel size
- This process is repeated until reduced image of 32 x 32 is achieved and turned into 1x1024 vector
- The 1x1024 vector is the unique ,footprint'/'spectrum'/'genetical code' of an image
- The network is trained in this manner with the entire training image set and the output ist probability for classification for a given labeled image



MODEL RUN



PNEUMONIA DETECTION

