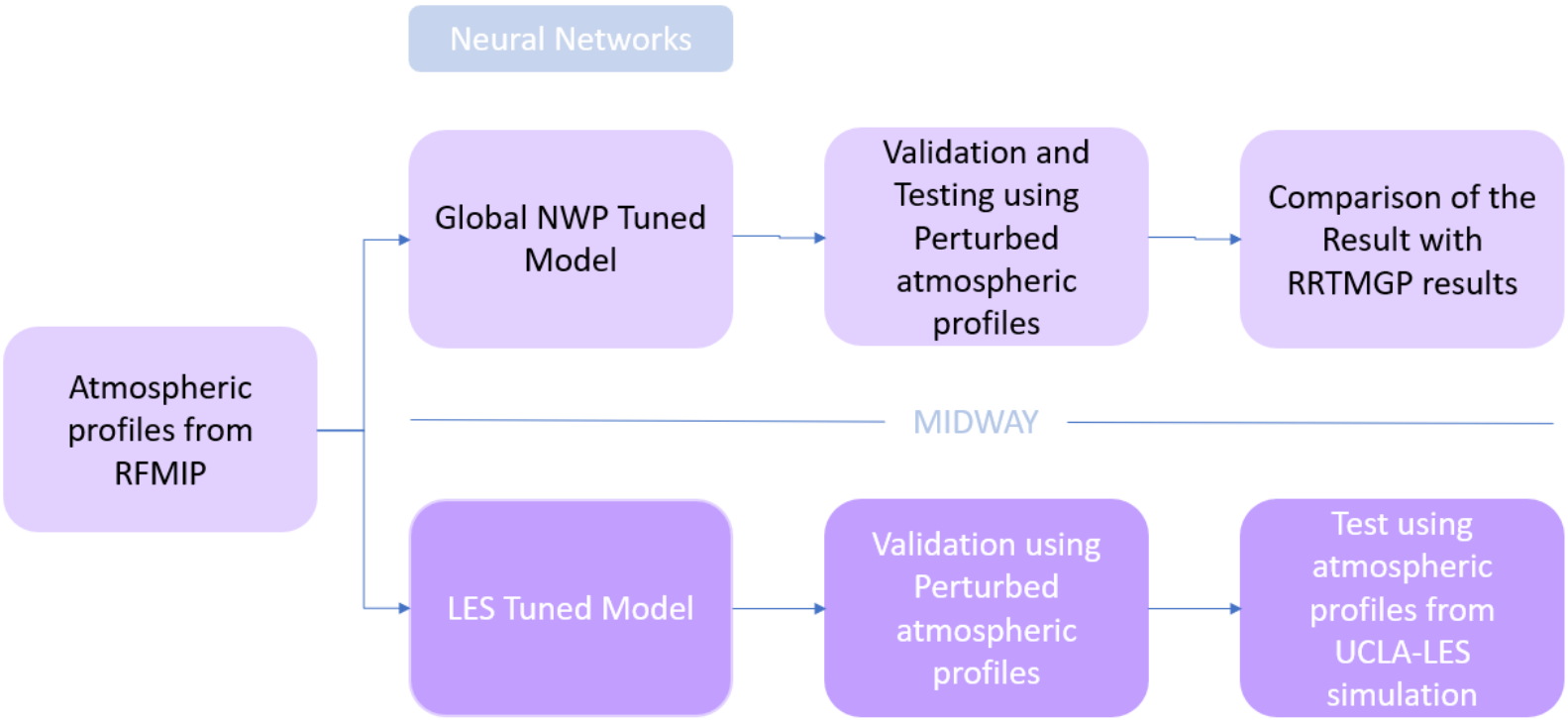
PROPOSAL

Application of Machine Learning in Predicting Gaseous Properties of Earth Atmosphere

- Team Members:Anna Binoy,Sumegha M.T.
- Mentor:Dr.Subhankar Mishra,Dr.Jayesh Goyal
- DataSet:Atmospheric profiles from RFMIP(Radiative Forcing Intercomparison Project)
- Idea:To accelerate the data-driven aspect of the calculation of optical properties from temperature,pressure and gaseous concentration of the atmosphere using neural networks.
- Relevant Papers:
  - Veerman, Menno A., et al. "Predicting atmospheric optical properties for radiative transfer computations using neural networks." Philosophical Transactions of the Royal Society A 379.2194 (2021): 20200095.
  - Fu Q, Liou KN. 1992 On the correlated k-distribution method for radiative transfer in nonhomogeneous atmospheres. J. Atmos. Sci. 49, 2139–2156.
- Work Division:
  - Slide Preparation and Report Writing-Both
  - Programming-Both
  - Gathering of Data -Sumegha
  - Data Processing -Anna
  - Reading Papers-Both

WorkFlow



- NWP-Numerical Weather Prediction
- LES-Large Eddy Simulation
- RRTMGP-Rapid Radiative Transfer Model Parametrization