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[illegible]

[illegible], Research Specialist — Jeddah, KSA
Jan. 2023 to present
1 year 4 months

- Developed a regional coupled climate model for subseasonal to seasonal scale prediction over Arabian Peninsula region. WRF and MITgcm were coupled using ESMF coupler
- Developed CLI preprocessing utility in Python for generating and manipulating input data for the coupled model
- Implemented seasonal pediction system for Arabian Peninsula region. A fault tolerant automated workflow for a 50 ensemble system is developed using Cylc workflow engine

[illegible], Scientist-D — Pune, India
Jan. 2020 to Dec. 2022
2 years 11 months

- Developed a novel spectral dynamical core for the atmospheric model of IITM-ESM enabling 2D domain decomposition in both spectral and grid point domains using FFTW library. This innovation significantly enhances scalability and throughput of the Model
- Developed a high resolution (6km) global forecast model using TCO grid for Short Range Forecasting
- Implemented MPI parallelisation in Ocean Dynamics Thermodynamic Model ODTM which improved the throughput of the model upto 30 times
- Supervised a team of 3-4 scientists working on IITM-ESM development

[illegible], Scientist-C — Pune, India
Jan. 2016 to Dec. 2019
3 years 11 months

- Development of a easy to use and modular I/O manager for IITM-ESM using the OOP capabilities of mordern Fortran and NetCDF4
- Implemented fractional grid for surface flux computation, resolving inconsistencies in flux-transfer over sea-ice and land-ocean boundaries. Significantly improved sea-ice simulations as a result (Swapna et al., 2018)
- Developed post-processing so wares in Python, C and Fortran using NetCDF4 and GRIB libraries

[illegible], Scientist-B — Pune, India
Jan. 2013 to Dec. 2015
2 years 11 months

- Implemented concurrent coupling using FMS coupler to increase the throughput of the IITM-ESM model
- Identified memory leak issues in the IITM-ESM using Valgrind and fixed it
- Did performance analysis of IITM-ESM using Allinea MAP and identified bottle necks

[illegible]

[illegible], Atmospheric Science — Apr. 2018 to Mar. 2024

- [illegible] Indian Ocean Dipole variations in a warming climate and associated linkages to monsoon and marine primary productivity (pdf)
- Used advanced statistical techniques such as cross-correlations, principal component analysis, significance tests and anomaly