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Project: 3
Matriculation Number: 1444966

Accomplishments after first TwoWeeklyReport:

Summarized key points from more recent papers, including challenge and trends in this paper: "A prediction-based model for virtual machine live migration monitoring in a cloud datacenter" [1]:

- A prediction-based model for VM live migration: The authors propose a model that can dynamically select the optimal live migration algorithm for a given performance metric based on machine learning techniques and historical data.
- Live migration algorithms and metrics: The authors review the existing live migration algorithms, such as pre-copy, post-copy, and their variants, and the key metrics to evaluate their performance, such as average power consumption, migration overhead, downtime, performance degradation, SLA violation, and average migration time.
- Regression techniques: The authors use three regression techniques to build their prediction model: Ridge Regression, Support Vector Regression, and K-Nearest Neighbors Regression. They explain the theoretical background and the advantages of each technique.
- Live migration modeling: The authors describe the process of their model, which consists of building 30 sub-models for each combination of live migration algorithm and target metric. They use a feature selection methodology to identify the most relevant input features for the prediction task.

Goals for the Next Week:

- Further explore practical applications of the Research papers findings in cloud computing scenarios.
- Research additional literature on VM migrations to identify trends and research gaps.

Anticipated Obstacles:

- Currently, no idea what is next for our Research and Which methodology should we use.

Conclusion: Progress is on track, and I'm excited to continue exploring the applications of VM migrations in cloud computing. Looking forward to discussing this in our next meeting.

Sincerely,

Ali Mohammad Nekoh

References

[1] El Motaki · Ali Yahyaouy · Hamid Gualous (2021). Springer "prediction-based model for virtual machine livemigration monitoring in a cloud datacenter".