Paper Title : HPC Forecast: Cloudy and Uncertain

Paper Link : https://cacm.acm.org/magazines/2023/2/268939-hpc-forecast/fulltext

Motivations :
The paper seeks to address the turbulent landscape of scientific computing, marked by semiconductor challenges, cloud dominance, and stagnating HPC innovation. It aims to motivate a paradigm shift in HPC design, advocating for collaboration between traditional vendors, cloud providers, and academia to navigate emerging complexities.

Methodology :
The authors analyze the evolving computing landscape, emphasizing semiconductor shifts and the growing influence of cloud providers. They derive insights from historical HPC developments, emerging chiplet technology, and changing economic dynamics to propose five guiding maxims for future HPC strategies.

Limitations :
>Overlooks potential ethical concerns in deep collaboration with commercial entities.
>Limited discussion on the societal implications of shifting from traditional HPC models to cloud-centric approaches.
>Assumes seamless international collaboration, overlooking geopolitical challenges.

Synthesis :
The paper motivates HPC evolution amidst semiconductor challenges and cloud dominance, proposing collaborative strategies through insightful maxims for future development. In conclusion, the paper advocates a transformative shift in High-Performance Computing (HPC) strategies, recognizing the challenges posed by semiconductor evolution and cloud dominance. It underscores the need for collaborative, end-to-end design approaches, emphasizing the dynamic landscape of leading-edge applications and the evolving role of cloud economics in shaping the future of HPC.