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Please consider me for the Summer School on Effective HPC for Climate and Weather. I started working at the Met Office as a Foundation Scientific Software Engineer within the Next Generation Modelling Systems Programme on the 9th of March. Previously, I graduated from Johns Hopkins University in December 2019 with a BS in Environmental Engineering where I conducted research on a spatial covariance-based method of downscaling carbon dioxide satellite data. I would like to expand the breadth of my knowledge of the challenges and effective usage associated with applying HPC to climate and weather science. I am impressed by the hybrid approach of the summer school in utilizing both lecture-based and project-based teaching methods.

Regarding the independent project, I think that it would be interesting to explore transfer learning-based machine learning for numerical weather prediction, as referred to as a potential future research direction in "WeatherBench: A benchmark dataset for data-drive weather forecasting". I think that utilizing the WeatherBench dataset would be a good idea due to Peter Dueben's role in its production. Additionally, I believe this would help me in my current role: my work is in observational processing, and the computational efficiency of deep learning in processing large datasets compared with physical methods necessitates understanding where implementations might be appropriate.

Having worked directly with air pollution researchers while at Johns Hopkins and software engineers in my current employment, I have an understanding of the different priorities of environmental scientists and software engineers. In my current position, I program in C++, while in the past I have used R, Python, and Matlab. I have additional experience with various software engineering concepts that make software collaboration easier, such as Agile software development and version control. Lastly, my prior tutoring experience has developed my communication skills and ability to describe solutions to quantitative problems to individuals with varying backgrounds. I think these areas of knowledge and experience would prove helpful during the collaborative project at the Summer School on Effective HPC for Climate and Weather.

I would appreciate consideration for the program. Thank you for your time.

Sincerely,
August Weinbren