Sunday, April 21, 2019
Letter of Recommendation for Amaresh Datta

To Whom It May Concern,

I am writing this as a letter of support for Amaresh Datta. Amaresh was a crucial part of my research program at the University of New Mexico from the time he began working in our group in Feb. 2012 until the summer of 2015. I would have tried to keep him on as a research faculty here had I not lost research funding for the group.

Amaresh played the crucial role of "analysis taxi driver" for the PHENIX collaboration for most of the time he was at UNM, an important contribution to the entire collaboration. To facilitate the use of the enormous amount of data written on various high-capacity disks most efficiently, all user jobs are checked for faults/bugs, tested on sample DST files and then submitted in the batch-queue system by a series of scripts maintained by the assistant PHENIX computing coordinator. The "analysis taxi driver" maintained performance and efficiency of the batch-queue system for PHENIX, helped various users on a daily basis with errors and faults from their codes so that their jobs can be submitted and added new DST file-sets to the batch-queue system as they became available after reconstruction. He also met with others responsible for the PHENIX software and computing system on a weekly basis to discuss maintenance, possible improvements and coordination between experts for various detector subsystems and the reconstruction manager. This job played an essential part in producing high-quality physics results in an efficient way at the PHENIX collaboration during this time.

Amaresh also played an important, and underappreciated role in an important data analysis project. At the PHENIX experiment, the cross section and double longitudinal spin asymmetry (A_{LL}) of J/Psi production could be measured via two different channels of decays, i.e. J/Psi $\rightarrow e^+e^-$ and J/Psi $\rightarrow \mu^+\mu^-$. PHENIX central arms at mid-rapidity $\eta = 0$ had the capability to detect electron (and positron) tracks via tracking detectors and electro-magnetic calorimeters whereas PHENIX forward arm spectrometers were designed to detect muons tracks. Amaresh worked on the unpolarized cross section and double spin asymmetry measurements via J/Psi $\rightarrow e^+e^-$ in the PHENIX central arms.

The quality analysis of tracking detectors in the central arms, beam-shift corrections and momentum scale calibration for correcting track momentum in the data used for this analysis were all done by Amaresh (aslo supervising Kathy DeBlasio) for Run 12 data. Another separate analysis for the calibration of the matching variables (deviation of projected tracks from actual hit positions in the detectors in azimuthal ϕ and beam z directions) was also undertaken by Amaresh.

Amaresh got our group up to speed in the simulation of both Drell-Yan in the forward muon arms, and J/Psi in both forward and central rapidities (J/Psi from single particle generators are passed through GEANT3 simulation of the PHENIX detector

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system) to calculate the geometric acceptance correction factor (PHENIX detectors do not cover 4π in solid angles), single electron track detection+reconstruction efficiency and corrections due to momentum resolution of the detectors. Simulations were also used to study cuts on different variables to reduce charged hadron background among the electron candidates.

Amaresh mentored an undergraduate and a graduate student in the analysis of an old data set (Run 9) Vernier scan data, training them in preparation for the Run-15 data analysis. Amaresh showed great enthusiasm and skill working with students, a quality much appreciated.

While Amaresh arrived too late to be involved in the assembly and installation of the FVTX, he showed an interest in being involved in our recent efforts to study the possibility of using GaAsP coated GEMs for an EIC RICH detector. While Amaresh left before this project began in earnest, but I am confident that Amaresh could play an equally important role in any hardware development task.

Finally, let me take a moment to praise Amaresh's overall work ethic, congeniality and contribution to me and my students' work environment. He was truly enjoyable to work with and to chat with both professionally and outside the workplace. I have discussed Amaresh with my students, and all agree that he has been a positive influence on them. He was always willing to take the time to explain difficult (and simple) issues to students, and carried a large part of the load of student supervision in our group.

I have kept track personally with Amaresh since he has moved to the group in Hawaii, but have not followed closely his work there, so I cannot speak to his accomplishments since his leaving UNM. In summary, I would place Amaresh as a good researcher, with a collegial demeanor, interested in and good at working with and mentoring students, and with a broad data analysis background.

Please feel free to call me if you have any questions.

Sincerely,

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