Fermilab MS 352
Batavia IL 60510

November 6, 2000

Dr. Aesook Byon-Wagner
MS 220
Fermilab, Batavia, IL 60510

Dear Dr. Byon-Wagner:

I am delighted to write a letter of recommendation in support of Vishnu Zutshi's application for a position on MINOS. I have been working closely with Vishnu for over 8 years, first when he was a graduate student on E706 and then a postdoc on DØ.

Vishnu joined E706 during the data acquisition phase and became actively involved in data taking and verification procedures. His subsequent work on data analysis was crucial to achieving the experiment's main goal – the measurement of the direct photon cross section. He advanced understanding of the energy response of the electromagnetic liquid-argon calorimeter; established cuts and corrections required for rejection of signals produced in the calorimeter by the beam-halo muons; studied various aspects of the E706 Monte Carlo system that was used for calculation of direct photon backgrounds due to hadronic sources.

During his work on DØ, Vishnu has undertaken several important projects in software development and in studies of the impact of the Run II detector configuration and beam conditions on the physics goals of the experiment. He made major contributions to development, verification, and tuning of the Run II Monte Carlo simulation of the DØ calorimetry and helped to clarify the importance of energy measurements in the preshowers for the overall energy resolution for electromagnetic signals. Vishnu has been developing the Level 3 electron and photon tools and demonstrated that a significant improvement in the photon signal purity relative to Run I can be obtained with proper use of the preshower information. He is actively pursuing studies of effects of multiple interactions, pileup, and the baseline subtraction on jet energy measurements, determination of missing E_T, and triggering at L1/L2 levels. Recently, he became a coleader of the jets subgroup of the DØ Higgs and Top Run II Physics group.

Vishnu is a competent C++ and Fortran programmer familiar with the DØ offline and L3 software environments and the relevant operating systems. He mastered a variety of software tools of the trade, including several event gener-

ators, GEANT, ZEBRA, PAW and ROOT. Vishnu is a creative and independent thinker, with strong problem solving skills. He works well with others, and has been effective in advising and directing students in our group.

Vishnu has proven himself to be a thoughtful and hard working collaborator, who can rapidly acquire new skills and contribute to diverse aspects of a high energy experiment. I believe he is an excellent candidate and highly recommend him for the position he is seeking.

Sincerely,

Marek Zieliński
Senior Research Associate
University of Rochester