The University of Michigan

to all who may read these letters, Greetings:

Hereby it is certified that upon recommendation of

The Horace H. Rackham School of Graduate Studies

The Regents of The University of Michigan have conferred upon

Harish Narayanan

in recognition of the satisfactory fulfillment of the prescribed requirements the degree of

Doctor of Philosophy

(Mechanical Engineering and Scientific Computing)

with all the rights, privileges, and honors thereto pertaining here and elsewhere. Dated at Ann Arbor, Michigan, this sixteenth day of December, two thousand and seven.

Mary Ene Coleman Bresident



Sally J. Churchill Vice President and Secretary