

To whom it may concern,

It is a great pleasure to support Mr. Narayanan Krishnamurthy's application to the doctoral program of the department of electrical engineering in your institution. I have known Narayanan since early Fall 2002 when he approached me and asked to do an Independent study with me in Electronic Circuit design.

Since I met him, I have observed Narayanan to be a very bright, mature, diligent and highly motivated student. As soon as he started his independent study, he started to work rigorously on the topics of the course and the lab projects with new and innovative ideas. He has a strong technical background in the areas of Microelectronics, Circuit Design, Micro-controllers, Computer and Networks.


In terms of academic performances ability, Narayanan has been consistently the best student in my class. His performances in tests, projects, labs, and other class activities and discussion are always been superior to all other students. He has an excellent ability to focus on any course, project, lab experiment, and anything else he is interested, and follow it through in a way that is nothing short of perfect. From my experience with him in course work, research and lab, he has ability to look at a problem and be very creative with his solution. He always brings a new and fresh perspective to the problems and projects that he is involved.

He is truly a bright and talented student who likes exceeding all expectation not just by his talent and skills but also hard work, persistence and perseverance. He has a positive attitude and a very clear vision of what he wants to do. He is very friendly and social person. I have seen him many times with other students, particularly in lab, involved in group discussion and solving problems.

Narayanan has very good written and oral communication skills. In light of his aforementioned background, I strongly believe that he will be a successful doctoral student.

In conclusion, I strongly and without any reservation recommend Narayanan Krishnamurthy to be admitted in to the doctoral program of the department of electrical engineering. Thank you for your consideration.

Sincerely,

 3/3/04

Shahrokh Ahmadi, Ph.D.  
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I am writing this reference letter for Mr. Narayanan Krishnamurthy (no relation to me), a Ph.D. student in the Electrical Engineering department at Pitt. I have known him since the summer of 2005, when he had approached me indicating an interest in the areas of wireless communications. I have been his advisor since then.

Narayanan's preliminary research focus pertains to design of medium access control algorithms for wireless LAN's. We have identified some topics that he can work on - specifically in the area of cooperative communications and quality of service in wireless LANs. Narayanan has worked very hard in getting up to speed in this area. He put together an excellent presentation for the research group on the topics he had learnt over the summer. Currently he is working on using discrete event simulators (C/C++ simulation of 802.11 in Opnet and ns-2) to implement cooperative communications and evaluate the effect of space-time diversity using relay transmissions in wireless LAN's.

In terms of his academic performance, he has consistently been on the top of his class. He took my Foundations of Wireless Communications course which has significant mathematical and analytical content and got an A grade. The homework and projects involved the use of Matlab as the programming tool. Narayanan has developed many software programs for his course and research work.

As his advisor and instructor, I have found Narayanan to be a quick learner, who does not hesitate to ask questions to clarify concepts. As an individual, he is meticulous, with an eye for detail and he has a very good work ethic. I have no hesitation in recommending him for the intern position. I am sure he will be an asset to your group's efforts. If you have any questions, please feel free to contact me.

Sincerely,

Prashant Krishnamurthy, Ph.D.

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## Letter of Recommendation

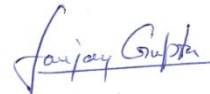
I am an Electronics Engineer, graduated from Indian Institute of Technologies (IIT) Madras, India in 1987 followed by MS in Electronics from the same institute in 1993. I have been involved in Research and Development from the very beginning. I am one of the founding members of Midas that has successfully developed, in partnership with IIT Madras a Wireless in Local Loop system known as *corDECT* based on the DECT European Telecom Standards Institute. The system has been designed to provide telephone and internet connectivity at an affordable cost, and to meet rapid deployment in developing countries. This system has been deployed in many countries such as India, Fiji, Madagascar, Yemen, Kenya, Iran, Angola, Argentina and Brazil. Presently I head the group that develops software for the project.

As part of *corDECT WLL* project team we recruited Mr. K. Narayanan in Jan 1999. We had almost missed recruiting him since his basic engineering degree is Mechanical and we were looking for people to work in the area of embedded software. The job requirement needed intimate knowledge of microprocessors, real-time operating systems, and a good command over C and assembly languages and ability to think in terms of real-time parallel processes. He was short-listed among the top 5% (out of 100 applicants) based on a technical test in the required area. Once we realized that he has a basic degree in Mechanical we were hesitant and told him so. His comment was "since I have performed well in the test, why should my degree matter, I am capable of performing as per your requirements and willing to learn". This positive attitude and assertiveness caused him to be taken as member of our design team. I am glad to say that we had made the right decision.

He has shown excellent intellectual abilities and wherever he lacked knowledge of the subject, he has persevered and acquired the knowledge from the right sources. He has proven himself to be a team person. He has interacted well with his colleagues, superiors and juniors. He has an ingrained motivation to strive for perfection and to perform beyond the best of his abilities.

His cheerful nature and ability to work under stress is commendable. We are that further education and Master's course would help him in acquiring greater knowledge and learning newer ways of problem solving. It would be sad for the company and for my design team to lose an asset such as him. However, we are sure that in the long run, he may either come back to Midas to take on greater responsibilities, or even if he doesn't he would be a great asset to any company or any group that he decides to work with.

Therefore, I would like to strongly recommend him for the Master's Program offered by your institute and wish him all success in his every future endeavor.



Sanjay Gupta

Director Software, Midas Communications

Dec 19, 2000

## Letter of Recommendation

I head the DECT and Internet support group at Midas. My team comprising of 15 software engineers are involved in developing the DECT protocol stack for the *corDECT system*, which is a wireless in local loop system developed jointly with IIT Madras. This system provides voice and internet connectivity to subscribers at a very low cost per line as the technology is developed indigenously.

I have known Mr K. Narayanan since Jan 1999, when he joined my team as a Development Engineer. Narayanan plays a key role in the group by heading a team involved in development of Layer 3 of the DECT protocol stack. The team is involved in enhancing current voice and internet application to support multiple services and higher data rates.

I would rate his intellectual ability at the top 5% amongst the members that constitute the group. He has a good knowledge of embedded systems programming and a good understanding of the DECT layers, necessary for the development activity.

I have found him to be a self-starter and tenacious at work. He is a good communicator and has made many presentations to our group on projects undertaken and trained incoming engineers on software engineering.

His work requires him to interact with various teams in achieving the group objective and I have found him to be a good team member. He exhibits the ability to take a task independently and brings originality in his work. His Master's Program would help him acquire the relevant skills to excel in the IT field. Thus, I have no hesitation in strongly recommending him for the program in your institute and wish him all success in his every endeavor.



A Balaji

Manager Software, Midas Communications

Dec 18, 2000