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**Name:** Dip Jyoti Malakar

**Present Address**

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**Permanent Address**

C/o Mr. H. Malakar  
Regional Meteorological Centre  
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**Date of Birth :** 5<sup>th</sup> July, 1982

**Email :** dipjyoti\_iitg@yahoo.com

**Objective :** Seeking a challenging position that utilizes my technical skills in computer science and managerial qualities, and requires productive leadership.

**Academic Record :**

Year	Level	Grade points	Board/University
2004	B.Tech (Computer Sc. & Engg.)	(7.78/10)	IIT Guwahati
1999	10+2	(77.8/100)	C.B.S.E
1997	10	(84.4/100)	C.B.S.E

**Technical Skills :**

<b>Computer Languages</b>	C, C++, JAVA, VXML, Perl, SQL (Oracle), CGI, HTML, ASP, JSP, Visual Basic, Visual C++, Shell Programming, LISP, Prolog, 8086 Assembly Programming, Latex
<b>Databases</b>	Oracle 8i, MS Access
<b>Operating Systems</b>	Linux (Red hat/Debian), UNIX (HP-UX), Windows (98/ME/2000/NT/XP), Solaris
<b>Softwares / Tools</b>	Voice Genie platform, OSR, Apache Tomcat, OpenGL, Rational Rose Suite, Microsoft Access, Xilinx simulator, JBuilder, Front Page, NS, Microsoft Speech SDK 5.1, Lex, Yacc

**Work Experience :**

**Reliance Infocomm Limited, Mumbai**

Software Engineer, Emerging Technologies and Services Group

**June 2004 – till date**

I was responsible for the design and development of Multi-lingual Speech Recognition applications in ten Indian languages for the Reliance CDMA mobile phones. These applications include Quiz, Airlines and Banking. This work included gathering information from the caller representatives for prioritizing the caller goals. After the Full design was created it was developed and tested.

Programming Language : JAVA, VXML

I was also responsible for the design of a web-based tool for the generation and validation of VXML and jsp code.

Programming Language : HTML, CGI, PERL

**Publications :**

- Dip Jyoti Malakar, Varun Varshney and Pradeep K. Das. "Analysis of patterns in Speaker Authentication using Discrete Probability HMMs". *3rd International*
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*Conference on Machine Learning and Cybernetics, August 26-29, 2004, Shanghai (China).*

- Dip Jyoti Malakar, Hemant Mishra and Sukumar Nandi. "Survey on TCP Performance over Mobile Ad Hoc Networks". ICCST, Guwahati, January 2004.

### **Projects completed :**

#### **B.Tech. Project : *System-on-chip Testing***

***July 2003 – April 2004***

done under Dr. S. Chattopadhyay, H.O.D., CSE, IIT Guwahati

Here in this work, several issues related to the design of optimal test access architecture with the goal of minimizing testing time have been carried. We have presented fast heuristic techniques for wrapper/TAM co-optimization, and demonstrate its scalability for several industrial SOCs.

Programming Language : C

#### ***Design of an efficient location based localized routing protocol for Mobile Ad Hoc networks***

***Jan 2004 - April 2004***

done under Dr. S. Nandi, Professor, CSE, IIT Guwahati

We have designed an efficient location based localized routing protocol for MANETs. Our protocol achieves lower Flooding rate than the existing widely used routing protocols.

Programming Language : Parsec, Software packages used : Glomosim (version 2.03)

#### ***Design of an efficient Transport protocol for MANETs***

***May 2003 - July 2003***

done under Dr. S. Nandi, Professor, CSE, IIT Guwahati

We analyzed the existing TCP protocols for Mobile Ad Hoc Networks (MANETs). We did a critical analysis of those approaches and finally we suggested some modifications to improve the TCP performance and to make an optimal transport protocol for Mobile Ad Hoc Networks. We have incorporated our modifications in NS-2 and we did our simulations in the same. We got better results (throughput) than the existing approaches.

Programming Language : C++, TCL, Software packages used : NS-2 (version 2.1b7)

#### ***Development of a Speech Authentication System***

***July 2003 – Dec 2004***

done under Dr. P.K.Das, Asst. Professor, CSE, IIT Guwahati

This system generates a random sentence in English language. The speaker speaks that sentence and the system records the voice of the speaker. It authenticates the speaker by verifying the voice with its codebook.

Programming Language : Shell script, Software packages used : HTK

#### ***Speech Automation of Microsoft Word in English***

***May2002 - July 2002***

done under Dr. P.K.Das, Asst. Professor, CSE, IIT Guwahati

This system takes the commands from the user as audio inputs (wav files) in English language and accordingly performs the actions.

Programming Language : Visual basic, Software packages used : Microsoft Speech SDK (version 5.1)

#### ***Displaying the various characteristics of audio input file***

***July 2002 - Dec 2002***

done under Dr. P.K.Das, Asst. Professor, CSE, IIT Guwahati

This system displays the various characteristics (amplitude, energy at different time intervals) of an input audio wave file in a graphical interface (Different characteristics are displayed in different window frames).

Programming Language : Visual basic, Software packages used : Microsoft Speech SDK (version 5.1)

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### **Seminars :**

- **Location based multipath routing algorithms for Mobile Ad Hoc Networks**  
done under Dr. S. Nandi, Professor, CSE, IIT Guwahati **Jan 2004 - April 2004**
- **Security Issues in the Satellite Communications** **July 2003 - Dec 2003**  
done under Dr. S. Nandi, Professor, CSE, IIT Guwahati
- **Web based Electronic Design** **Jan 2003 - April 2003**  
done under Dr. S. Chattopadhyay, HOD, CSE, IIT Guwahati

### **Courses Undertaken :**

Introduction to Computing, Data Structures, Algorithms, Programming Languages, Operating Systems, Databases, Data Communication, Computer Networks, Cryptography and Network Security, Distributed Systems, Wireless Networks, Computer Graphics, Software Engineering, Compilers, Speech Recognition, VLSI Systems Design, Digital Design, Computer Architecture, Computer Peripherals and Interfacing, Discrete Mathematics, Formal Language and Automata Theory, Theory of Computation.

### **Achievements :**

- Presented a paper on "Survey on TCP Performance over Mobile Ad Hoc Networks" in *ICCST, Guwahati*.
- Awarded the **best Mathematician of the region** (Guwahati region, Assam, India) in the year 1999.
- Got merit certificates for 4 consecutive years in **All India Mathematics Olympiad** (1996, 1997, 1998, 1999).

### **Co-curricular Activities :**

- Organized '**Tarang**' the Eastern Music Event at Alcheringa, IIT-Guwahati cultural Festival.
- Organized '**Open Software Contest**' at Techniche, IIT-Guwahati Technical Festival.

**Hobbies :** Listening to music.

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