

## Shilpa Satish

2700 Waterview Parkway, Apartment 4633. Richardson, Texas 75080

shilpa\_skhatawate@yahoo.com 408 505 9340 (M), 972 234 8529

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### Objective

To seek a challenging full time position in the field of Electrical Engineering that applies technical and interpersonal skills and enhances industry experience.

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### Education

<b>Master in Electrical Engineering</b> The University of Texas at Dallas	GPA 3.43	August 2004-May 2006
<b>Bachelor of Electronics and Communication Engineering</b> M.S. Ramaiah Institute of Technology, Bangalore India.	GPA 3.70	September 1999-June 2003

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### Computer Skills

Programming Languages: C/C++, MATLAB, LabView  
Operating Systems: UNIX/Linux, Windows

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### Work Experience

#### **Broadband Information Transmission and Signaling Laboratory (BITS)**

Department of Computer Science and Engineering  
University of Texas at Dallas

**Position:** Graduate Research Assistant

**Period:** 01/2005 – present

- **Masters Thesis - Optimum DCT-Based Multicarrier Transceivers for Frequency Selective Channels**  
Design of a novel cyclic prefix for DCT-based Multicarrier Transceiver  
Demonstrated that DCT-based OFDM system outperforms DFT-based OFDM system in the presence of several channel impairments like, Frequency offset, Narrowband Interference, Channel Estimation and Doppler Effect.
- **Study of Narrowband Interference in ADSL systems**  
Implemented the Throughput model and compared the performance of DCT and DFT-based OFDM system, in the presence of Narrowband Interference

#### **Larson and Toubro InfoTech**

Telecommunication Department  
Church Street, Bangalore, India.

**Position:** Software Engineering Trainee

**Period:** 07/2003 – 07/2004

- **Robust Header Compression (RoHC)**  
Designed and developed the Compressor, CRC and Encoding protocols for ROHC using C.  
Participated in unit testing and integration testing of the protocol.  
Assisted in code optimization to make the protocol OS independent.
  - **Hybrid Access Terminal (HAT)**  
Designed the HAT Simulator to monitor handoff between CDMA1x and WLAN networks  
Designed and developed GUI for HAT using C under Linux/UNIX
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### Academic Projects

- **Frequency Domain Equalization of DCT based OFDM system**  
Implemented the Frequency Domain Equalizer (FEQ) for DCT Multi-carrier Modulation (MCM)  
Compared the Bit Error Rate (BER) curve for DCT MCM with and without TEQ
- **Simulation of CDMA Wireless Communication System**  
Studied the CDMA Technology and simulated a CDMA Wireless Communication System using MATLAB
- **Study of Crosscorrelation of Delayed Signal**  
Completed a comprehensive study of LabView  
Developed an application to determine the significance of Crosscorrelation in a delayed signal
- **Implementation of Data Transmission Subsystem of ADSL Transceiver at *Indian Institute of Science, Bangalore, INDIA***  
Designed and simulated the Physical Layer of ADSL Transceiver using MATLAB  
Analyzed the advantages of DMT technology in communication through copper lines

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**Publications**

**“Optimum DCT-Based Multicarrier Transceivers for Frequency-Selective Channels”** by Naofal Al-Dhahir, Hlaing Minn, Shilpa Satish, To appear in the IEEE Transactions on Communications, 2006.

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**Research Interests**

- Broadband Wireless Communication Systems and Standards: IEEE Std. 802.11, 802.16, 802.15
  - Design and Development of Wireline/Wireless Networking Protocols
  - Design and Development of Signal Processing Algorithms
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**Academic Courses**

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|-------------------------------------|-------------------------------------|------------------------------|
| 1. Random Processes                 | 2. Digital Communications           | 3. Digital Signal processing |
| 4. Intro to Wireless Communications | 5. Estimation Theory                | 6. Intro to Telecom Networks |
| 7. Computer Communication Networks  | 7. Broadband Digital Communications |                              |
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**Keywords**

DSP, Broadband, Wireless, Wireline, ADSL, DSL, DMT, RF, Networking, WLAN, WMAN, WPAN, PHY, MAC, Equalizers, Vocoders, GSM, VOIP, IP, OFDM, Synchronization, Multithreads, Channel Modeling, Modulation

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**Personal Strengths**

Excellent written and oral communication skills  
Honest and hardworking with a willingness to learn  
Reliable team player with good interaction skills

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**References**

On Request

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**Availability and Status**

Full time Position - May 2006,  
F1 (Student Visa), Authorized to work in the United States

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