A. Biographical Data

Name: Venkat Devarajan **Date:** Oct 31, 2007
Date of Birth: April 2, 1951 **email**: Venkat@uta.edu

Education:

Degree	*Date*	*School*
BSEE	1973	Indian Institute of Technology, Madras, India
MSEE	1975	Indian Institute of Technology, Madras, India
Ph.D.	1980	The University of Texas at Arlington, Texas

Honors:

- Rockwell International Fellow at UTA 1977 - 1979
- Associate Fellow, AIAA, 1989
- College of Engineering Research Excellence Award, 2002
- Lockheed Martin Outstanding Teacher Award (in COE), 2003
- Senior Member, IEEE, 2004
- College of Engineering Nominee for the Piper Professor Award 2006

Professional Experience:

1998-Present	Professor of Electrical Engineering, University of Texas at Arlington, Arlington, TX.
1990 – Present	CEO of Imagecom Inc.
1990 - 1998	Associate Professor of Electrical Engineering, University of Texas at Arlington, Arlington, TX.
1979 – 1990	Technical Project Manager: LTV Missiles and Electronics Group, Dallas, Texas, now the Lockheed Martin Vought Systems Company.

B. Teaching Activities

1. **Courses Taught** (1975-1990 - courses taught as adjunct faculty)

EE 2315	DC Circuits Design - Two semesters
EE2316	AC Circuits Analysis - Two semesters
EE3303	Electronics - two semesters
EE3317	Linear Systems - One semester
EE3309	Digital Logic Design - Two semesters
EE4311	Microprocessors (8-bit) - Four semesters
EE5313	Microprocessors (16-bit) - One semester

Current Courses (1990-Present – as full time faculty at UTA)

EE 5302	Random Signals and Noise
EE 3330/4328	Probability and Random Signals
EE 6358	Computer Vision
EE 6357	Digital Photogrammetry
EE 2315	Electric Circuits
EE 5359	Telecommunications Networks

2. New courses developed:

EE Telecommunications Networks - One semester, graduate level, 1990
EE 3330/4328 Probability and Random Signals - Undergraduate, 1992
Member of committee revamping the Communications curriculum, September 1990. Helped introduce Data Communications, Advanced Data Communications, and Network Modeling and Simulation into the new graduate catalog.
EE 5359 Digital Photogrammetry

3. Teaching techniques or materials developed:

a) Developed a set of tools to teach real time imaging, digital image warping and some aspects of Digital Photogrammetry as a part of a proposed Digital Photogrammetry course.
b) Obtained the Vision Tutor lab guides, lecture notes and transparencies together with the KBVISION package as a teaching tool set for Computer Vision. These tools gave the students real world experience in the use of computer vision tools. My Virtual Environment Lab also serves as a teaching lab for my Computer Vision course. We have 15 high end computers together with the tools needed to provide comprehensive coverage of the course materials. This was done with no financial help from the department.
c) Obtained and showed to the computer vision class video tapes of real world applications of computer vision in futuristic robots developed by NASA contractors.
d) Obtained and showed video tapes of over 20 different visual systems for flight simulation for the Digital Photogrammetric class. Arranged guest lectures on flight simulation by several experts from the industry including Lockheed Martin, L3 Communications etc.
e) Developed a web based course (Random Signals and Noise, EE 5302) presently taught under the UT Telecampus. This took a summer of video taping and conversion to a multi-media CD. Dozens of animations were generated to illustrate mathematical concepts. Many real world examples were included in the curriculum for a better understanding of the probabilistic concepts. Attended a two day conference in Austin that taught me how to go about setting up such a course.
f) In the summer of 2003, I started teaching Computer Vision entirely using the Ransom Hall computing facility. The course has now become completely hands-on. Each pair of students works on a substantial research project and produces reports that are often publishable. One set produced a report that went into a large interdisciplinary proposal submitted to NSF.

4. Awards, citations, honorary degrees, or other recognition of teaching or professional excellence:

- Rockwell International Fellow at UTA 1976-1979
- Director's Award at LTV (now Lockheed Martin Vought Systems) 1989.
- College of Engineering, Research Excellence Award – May 2002.
- Robert Q. Lee Award for Teaching Excellence (Lockheed Martin Teaching Excellence) – May, 2003
- Nominated from the College of Engineering for the State-wide Piper Professor Award – 2006 and 2007

5. Participation in organizations, conferences or other activities concerned primarily with teaching:

- Attended a two-day intensive course on Presentation Skills Development from Communispond Inc., Dallas, November, 1988. This helped greatly with my ETV/TAGER presentations.
- Attended a two day conference in Austin Texas, in 2000 that taught me several aspects of preparing a Telecampus course.

C. Scholarly and Professional Activities

1. Completed Ph.D. Dissertations Supervised: 8

Name	***Completion Date***	***Title of Dissertation***
1) Wheatley, Charles	May, 1994	"Dynamic task allocation in distributed computing"
2) Tyan, Leewen	December, 1996	"Automatic Identification of Non-intersecting Features From 2D CAD Input"
3) Bryan Bell	August, 1997	"Analysis of Image Correlation Methods in the presence of Perspective Distortion"
4) Rajan Ganesan	December, 1997	"Automatic Extraction of Intersecting Features From 2D CAD inputs"
5) Tingcheng Lu	Dec. 1999	"Dynamic Load Balancing for Volume Terrain Visualization"
6) Jengpang Peng	December, 2000	"Extraction of Semantic Information from 2D CAD drawings"
7) Xiuzhong Wang	May 2005	"Deformable Haptic Models for Surgical Simulation"
8) Yunhe Shen	May 2005	"Real Time Collision Detection And Soft Tissue Deformation For Haptic Simulation Of Laparoscopic Surgery"

2. Masters Theses Supervised: 43

Name	***Completion Date***	***Thesis Title***
1) Pillutla, Ramesh	December, 1991	"Control algorithm for a rearrangeable TSSST switch"
2) Ramaswamy, G	December, 1991	"Infra red scene simulation using multi-spectral imagery"
3) Sundaramurthy.V	May, 1992	"Construction of 3 dimensional CAD models from 2 dimensional data"
4) Husselbaugh, Brett	August, 1992	"Blocking probabilities in a multi-casting multi-stage network"
5) Ghaffar, Abdul	December, 1992	"Rearrangement and blocking probability studies for a multi-stage multi-casting switching network"
6) Vasudevan, Mini	May, 1993	"Rearrangement on a Clos Network in for I and II stage broadcast"
7) Malla, Raja	August, 1993	"Study of image matching algorithms and similarity metrics for autonomous on-orbit image based navigation"
8) Ganesan, Rajan	May, 1994	"FlexiCAD architecture"
9) Balachander, Ram	December, 1994	"Form feature extraction from 2D orthographic views."
10) Sanampudi, P.	May, 1995	"Performance Studies of a Rearrangeable Three Stage Clos Broadcast Network"
11) Satish Kumar A	December, 1995	"Design of a Hierarchical Object-oriented Feature Library"
12) Suresh, Lavanya	December, 1996	"Plane Cutting Algorithm For 2D CAD to 3D Solid Model Conversion"
13) Sharon Barber	December, 1997	"Object Recognition Using Invariants"
14) S Viswanathan	December, 1998	"Protrusion and Depression Detection from 2D CAD Inputs"
15) Lakshmi Jayaram	August 2000,	"Extraction of Rectangular and Polar Arrays from Hole Features"
16) Mike Chu	May, 2001	"Road Extraction From Aerial Imagery Using Parallel Edge Detection and Hough Transforms"
17) Ganeshram Iyer	December, 2001	"Development of API-based interfaces to enable interoperability between CAD Systems during design collaboration"
18) Ganesh Sankaranarayanan	May 2001	"Direct haptic rendering from voxel datasets using scalar trivariate b-spline function"
19) Sarika Pathak	May 2001	"Simulation of CO2 Insufflation of the abdominal cavity for Laparoscopic surgery"
20) Fuentes, Robert	December, 2002	"Automated Generation of Terrain Levels of Detail Using Wavelet Transforms"

21) Ganapathy S.	December, 2002	“A software model for interoperability between heterogeneous CAD systems”
22) Dharmarajan N	December, 2002	"Architecture for real time manipulation and collaboration of geometric models across heterogeneous CAD systems”
23) Siva Sugavanam	December, 2002	“Simulation of a preperitoneal mesh in laparoscopic hernia surgery”
24) Laks Raghupathi	December, 2002	“Simulation of bleeding and other visual effects for virtual laparoscopic surgery”
25) Nana, Vijay	December, 2002,	"Algorithms for the Conversion between Design & Manufacturing features"
26) Arunachalam, K	December, 2002	"Methods to featurize 3D solid geometry containing non-prismatic surfaces"
27) Naidu, Karthik	December, 2002	“Creation of Static and Cynamic Models of Instruments for a Virtual Reality Trainer for Laparoscopic Surgery”
28) Saurabh Maitra	December 2002	“Identification of Interacting Manufacturing Features from 2D Drawings using Delta Decomposition”
29) Ajith Gande	August, 2003	“Instructor Station for Virtual Laparoscopic Surgery”
30) Kapadoskar S.	August 2003	**“**Simulation of Inguinal Hernia Condition using Visible Human Dataset and 3D Modeling Techniques**”**
31) Ritesh Agarwal	May 2003	“Simulation of Irrigation and Suction for a Virtual Reality based Laparoscopic Surgery Simulator”
32) Vivek Gupta	July 2003	“Extraction of Realistic Anatomical Texture from Visible Human Data for Laparoscopic Surgery Simulation:
33) Girish Gopal	March 2003	“StapSim: Virtual Reality-based Stapling Simulation for Laparoscopic Herniorrhaphy”
34) Yogendra Bhasin	May 2003	“Collision Detection for Haptic Interactions in Virtual Surgery”
35) N. Subramanian	March 2003	“Automatic Identification of Nested Features in 2D Topology”
37) V.S. Gudivada	May 2003	“Extraction of Circular Bosses from 2D Orthographic Profiles”
38) Vikram Kalaiselvan	December 2003	"Improving Stability of Tissue Models in Laparoscopic Surgery Simulation"
39) Jeff Benshettler	December 2003	"Simulation of Blunt Cutting using Tetrahedral Models"
40) V. Chandramouli	December 2003	“A Hybrid Collision Detection Method for Virtual Laparoscopic Surgery”
41) Badri Natarajan	August, 2004	“Decentralized Hierarchical Architecture For Conferencing In Enterprise Voice Networks”

42) J.Swayambukesan	May 2005	Adaptive Image Interpolation Video De-Interlacing And Frame Rate Conversion Using Wavelet Transform
43) Jitesh Butala	December 2005	"Collision Response for Virtual Laparoscopic Surgery"
44) Sumit Tandon	August 2007	"Design and Simulation of an Accurate Breast Biopsy System"
45) Vishal Dalmya	Aug 2007	"Modeling Isotropic Organs using Beam Models for the Haptic Simulation of Blunt Dissection of a Bile Duct"

3. Undergraduate Research Experience (REU) Students Supervised**:**

Supervised the following students under the Summer NSF/REU program in 1993: George Torres, Christine Hernanado (Hispanic Students from The UT at El Paso), Shelly Taylor and Alexander Douglas. Five out of the 12 REU department-wide students worked with my group on Virtual Reality related research. Supervised Robin Yan in the summer of 2001.

Ashley Williams:	"Correcting Errors in Vector Drawings" BSEE Research Project October 3, 1999
Huanhui Hu,	"Detecting and correcting parallelism and perpendicularity errors in 2D CAD drawings," BSEE Research Project, December 1999.
Yuanfang Yan	"Surgical Tools Used In Minimally Invasive Surgery Simulation," Research Experience for Undergraduates (REU) Project, August 2001
Sandhya Shrestha	"Creation of simulated ailment in human organ using 3D Studio Max." Fall 2002
Pradeep Mohanraj	" Data Base Corrections to Inguinal Hernia Scenario", Fall 2005
Pradeep Mohanraj	"Key and Driving Points calculations for Splines" Summer, 2006

4. Current Advisees:

Masters: 9	[Arindamnath Das, Koyel Chatterjee, Preyes Desai, Rupin Ravichandran Dibbesh Adhikari, Sudeep Sharma, Kumar, Abhijitsingh, Ravi Kiran, Kriti Chauhan]
Doctoral: 2	[Ganeshramji Iyer, Ninad Thakoor]

5. Publications

Title and Date of My Masters Thesis: "Improvements to delta modulation schemes for speech coding," The Indian Institute of Technology at Madras, August, 1975.

Title and Date of My Doctoral Dissertation:

"DPCM coders with adaptive predictors for NTSC signals," The University of Texas at Arlington, May, 1980.

5a. Publications (Refereed Journal Papers)**:**

1) V. Devarajan, V. Vlasenko, M. A. Narasimhan and K. R. Rao, "Cal-Sal Walsh-Hadamard Transform," IEEE Transactions on ASSP, Vol. ASSP-26, pp. 605 - 607, December, 1978

2) M. A. Narasimhan, V. Devarajan, and K. R. Rao, "Simulation of Alphanumeric Print Recognition," IEEE Transactions on System, Man and Cybernetics, Vol. SMC-10, No. 5, pp. 270 - 275, May, 1980

3) V. Devarajan and K. R. Rao, "Predictor Adaptive DPCM Coders for NTSC Composite TV Signals," IEEE Transactions on Communications, Vol. COM-28, No. 7, pp. 1079 - 1084, July, 1980.

4) J. T. Hooks Jr., G. J. Martinsen and V. Devarajan, "On 3 D Perspective Generation from a Multi- Resolution Photo Mosaic Data Base," CVGIP - Image Processing and Graphical Modeling, Vol. 55, No. 5, Sept. 1993, pp. 333-345.

5) Y. Mun, R.Tang and V. Devarajan, "Analysis of Call Packing and Rearrangement in a Multi-Stage Switch," IEEE Transactions on Communications, Feb./March/April 1994, Vol. 42, No, 2/3/4, pp. 252-254.

6) R. Ganesan and V. Devarajan, "A feature-based framework for transforming and representing multiple format CAD for virtual prototyping," Virtual Environments and the Product Development Process. Editor(s): Rix, Haas and Teixeira, Chapman and Hall, 1995 pp. 129-145.

7) F. M. Weinhaus and V. Devarajan, "Texture Mapping 3 D Models of Real World Scenes in Perspective," ACM Computing Surveys, Vol. 29, No. 4, Dec., 1997, pp. 325-365.

8) Leewen Tyan and V. Devarajan, "Automatic Identification of Non-intersecting Machining Features From 2D CAD input," *CAD.* Vol. 30, No. 5, pp. 357-366, 1998.

9) R. Ganesan and Venkat Devarajan, "Intersecting Features Extraction from Orthographic Projections," *CAD* Vol. 30, No. 11, pp. 863-873, 1998.

10) Bryan Bell and Venkat Devarajan "Analysis of Area-based Image Matching Under Perspective Distortion for a Planar Object Model," International Journal of Electronic Imaging. Vol. 8, No. 1, pp 112-125, Jan. 1999.

11) Fujun Wang, John J. Mills and Venkat Devarajan, "A Conceptual Approach to Managing Design Resource," Computer and Industry, Vol.47, (2002), pp 169-183.

12) R. Fuentes, Venkat Devarajan and Donald E. McArthur, "Automatic Generation of Hierarchical TINS from Digital Terrain Elevation Data using Wavelet Filtering," Photogrammetric Engineering & Remote Sensing, , March 2000, Photogrammetric Engineering and Remote Sensing, pp.287-295

13) Xiuzhong Wang and Venkat Devarajan, “1D and 2D structured mass-spring models with preload”, Visual Computer, International Journal of Computer Graphics, Vol. 21, Number 7, August 2005, pp 429-448.

14) Ganeshram R. Iyer, John J. Mills, Venkat Devarajan, Sharon Barber, Saurabh Maitra, “Using a Context-Based Inference Approach to Capture Design Intent from Legacy CAD”, Computer-Aided Design and Applications, Vol. 3, Nos. 1-4, 2006, p 269-278

15) Venkat Devarajan PhD, Yunhe Shen PhD, Xiuzhong Wang PhD, Mark J. Watson MD, Robert Eberhart PhD, Dan Jones MD and Leo Villegas MD “A Novel Laparoscopic Mesh Placement Part Task Trainer”, Int. J. Medical Robotics & Computer Assisted Surgery, Volume 2, Issue 4, December 2006, pp. 312-320.

16) “Improved 2-D mass spring damper model with unstructured triangular meshes”, Xiuzhong Wang and Venkat Devarajan, The Visual Computer, Accepted for publication.

5b. Patents Filed (Provisional)

1) A methodology for feature-based translation of 3D models among heterogeneous CAD systems, Inventors: Ganeshram Ramji Iyer, Raj Iyer, Niranjan Dharmarajan, Ashley Williams and Venkat Devarajan, Dec 14, 2001

2) A methodology for automated bi-directional conversion between design and manufacturing feature models Inventors: Raj Iyer, Vijayjeevan Nana, Saurabh Maitra, Niranjan Dharmarajan & Venkat Devarajan, July 19, 2002

3) A methodology for automated conversion of 2D CAD drawings to parametric 3D CAD models Inventors: Raj Iyer, Dr. Venkat Devarajan, Ashley Williams, Sharon Barber, Subramaniam Navaneethakrishnan, July 19, 2002

4) A methodology for Incremental update of feature models during feature-based translation of 3D CAD models Inventors: Niranjan Dharmarajan, Venkat Devarajan, July 19, 2002

5) "Method, system and apparatus for simulation of real-time, three dimensional ultrasound guided, haptic assisted breast biopsy" – 2007, uspto serial no. 60/950,525

5c. Patents Filed (Final - pending)

Venkat Devarajan et al, “SYSTEM AND METHOD FOR CREATING AND UPDATING A THREE-DIMENSIONAL MODEL AND CREATING A RELATED NEUTRAL FILE FORMAT” submitted July 23, 2003 to the US Patent Office. Update filed November, 2006.

6. Scholarly Papers or Lectures Delivered

6a. Conference Papers Peer-Reviewed and Published in Proceedings

1) M. A. Narasimhan, V. Devarajan and K. R. Rao, "Simulation of Alphanumeric Machine Print Recognition," 8th Annual Pittsburgh Conf. on Modeling and Simulation, Pittsburgh, pp. 1111 - 1115, April 21 - 22, 1977.

2) M. A. Narasimhan, V. Devarajan, and K. R. Rao, "Cal-Sal Walsh-Hadamard Transform," 20th Midwest Symposium on Circuits and Systems, Texas Tech Univ., Lubbock, Tx, pp. 705-709, August 15 - 16., 1977.
3) V. Vlasenko, V. Devarajan and K. R. Rao, "Unified Matrix Treatment of Discrete Transforms," 10th Annual Southeastern Symposium on Systems Theory, Mississippi State Univ., MS, pp. 11.B - 18 through 11.B - 29, March 13 - 14., 1978.

4) V. Vlasenko, V. Devarajan and K. R. Rao, "A Generalized Approach to Modeling of Orthogonal Transform Algorithms," 9th Annual Pittsburgh Conference on Modeling and Simulation, Pittsburgh, pp. 1473 -1478, April 27- 28, 1978.

5) V. Devarajan, N. Cox and K. R. Rao," Adaptive DPCM Coders for Composite Color Television," 12th Annual Asilomar Conf. on Circuits, Systems and Computers, Pacific Grove, CA., pp. 317 - 321, November 6 - 8, 1978.

6) V. Devarajan and K. R. Rao," Predictor Adaptive DPCM Coders for NTSC Composite TV Signals," International Communications Conference, Boston, MA, pp. 23.8.1 - 23.8.6, June 11 - 13, 1978.

7) V. Devarajan and K. R. Rao, "Channel Error Propagation in Predictor Adaptive DPCM Coders," SPIE International Technical Symposium, San Diego, CA, pp. 28 - 33, July 28 - August 1, 1980.

8) J. T. Hooks and V. Devarajan, "Simulation of FLIR Imagery Using Computer Animated Photographic Terrain Views," IMAGE II Conference, pp. 25 - 34, June 10 - 12, 1981. <u>This was the first ever paper presented on Photo-based Visual Technology and acknowledged in the industry as pioneering work</u>

9) J. T. Hooks and V. Devarajan, "Digital Processing of Color Photography for Visual Systems," Proceedings of the 3rd Inter service Industry Training Equipment and Exhibition, Orlando, FL, pp. 47 - 55. <u>Panel-reviewed as an abstract and as a paper. This paper represents and is acknowledged as pioneering work</u>, November 30 - December 2, 1981.

10) V. Devarajan and J. T. Hooks, "Low-altitude/High-speed Flight Simulation Using Video Disk Technology," Proceedings of the IMAGE III Conference, Phoenix, pp. 54-65, May 30 - June 1, 1984.

11) V. Devarajan and M. E. Heslep, "Digital Photogrammetry on an Advanced Data and Picture Transformation System (ADAPTS)," SPIE Symposium on Opto-Electronics and Laser Applications in Science and Engineering, Los Angeles, CA, Proceedings of

SPIE, Methods of Handling and Processing Images, pp. 84 - 87, January 11 - 16, 1987.

12) V. Devarajan, "Image Processing in Visual Systems for Flight Simulation," (Invited Paper), Proceedings of SPIE Conference on Digital Image Processing Applications, Los Angeles, pp. 208 - 216. Served as the Session Chairman on "Scientific Visualization" and Co-chairman of the conference on Digital Image Processing Applications, January 15-20, 1989.

13) V. Devarajan, D. E. McArthur and B. Zvolanek, "Statistical Prediction of an Infrared Image from Multi-Spectral Imagery for Common Visual Data Base Generation," Proceedings of the I/ITSC conference, San Antonio, pp. 876-881, Nov. 2-4, 1992.

14) V. Devarajan and D. E. McArthur, "Terrain Modeling for Real-Time Simulation," Proceedings of the Annual ACSM/ASPRS conference, Vol. one, pp. 129-138, New Orleans, Feb. 14-18, 1993.

15) V. Devarajan and D. E. McArthur, "Terrain Modeling for Real-Time Texture Simulation" Proceedings of SPIE International Symposium on Aerospace Science and Sensing, pp. 325-333, Orlando, FL, April 12- 16, 1993.

16) V. Devarajan and D. E. McArthur, “Terrain Modeling for Photo-texture based simulation,” Proceedings of AIAA Flight Simulation Technologies Conf., pp. 133-139, Monterey Bay, CA, 9-11, August, 1993.

17) R. Ganesan and V. Devarajan, “The Flexicad Architecture for Integrated Product Modeling And Manufacture By Features,” Proc. of 4th. Intl. Con. on CIM and Automation Tech., pp. 234-240, New York, 1994.

18) Ravi Sundaram, Donald McArthur and Venkat Devarajan, “Incremental Real-Time Delaunay Triangulation For Terrain Skin Generation” I/ITSEC ‘94, Orlando FL, Nov. 28-Dec.1, 1994, Article 6-4.

19) Johannes G. Heijmans, Mini Vasudevan and Venkat Devarajan, “Graph Coloring and Rearrangeability of Multi-stage Multi-casting Clos Networks,” Presented at SIAM Conf. on Discrete Mathematics, Albuquerque, June 1994.

20) Venkat Devarajan, Robert Fuentes and Donald E. McArthur, “An Approach to Multiple of Levels of Detail Generation From Digital Terrain Elevation Data Using Wavelet Transforms,” Proceedings of ITEC 96, The Hague, April 16-18, 1996, pp. 255-262.

21) Bryan Bell and Venkat Devarajan, “Image Correlation Under Full Perspective Distortion,” Proc. of SPIE Conference on AEROSENSE, Orlando Florida, 8-12 April 1996, Vol. 2753, pp. 38-49.

22) David McCoy and Venkat Devarajan, “Image Classification for Simulation Database Generation using Genetic Programming.,” IMAGE Conference, June 23-28, 1996, Phoenix, AZ., pp. McCoy 1-8.

23) Abdul Ghaffar and Venkat Devarajan, “Middle Stage Requirements and Blocking Probability Validation for Three Stage Broadcasting Clos Networks,” ICC ‘96, June 23-27, 1996, Dallas, TX., Vol. 2 of 3, pp.1050 - 1054.

24) Robert Fuentes, Donald McArthur and Venkat Devarajan, “On Hierarchical Multiresolution Terrain Polygon Generation Using Wavelet Transforms and Optimal Meshing,” AIAA Conf. on Flight Simulation, San Diego, CA, July 29-31, 1996, pp. 638-647.

25) S. Subbarayan, K.K. Kim, M. Manry, V. Devarajan and H. Chen, “ Modular Neural Network Architecture using Piece-wise Linear Mapping,” Proceedings of the Thirteenth Asilomar Conf. on Signals, Systems, and Computers, Nov. 3-6, 1996, Pacific Grove, CA. pp.1171-1175.

26) Mike Chu and V. Devarajan, “Road Extraction From Aerial Imagery Using Parallel Edge Detection and Hough Transforms,” Proc. of the ASPRS Conference, April 7-10, 1997, Seattle, WA., pp. 106-114.

27) Tae Kim and V. Devarajan, “Road Extraction From Aerial Imagery Using Neural Networks,” Proc. of the ASPRS Conference, April 7-10, 1997, Seattle, WA., pp. 146-154.

28) David McCoy and V. Devarajan, “Artificial Immune Systems for Aerial Image Segmentation,” Computational Cybernetics and Simulation - SMC’97, Orlando, FL, Oct. 13-15, 1997, pp. 867-872.

29) Devarajan V., Fuentes R., and McArthur D., (1997), “Hierarchical multi-resolution terrain TIN generation using wavelet filtering I/ITSEC-97, Dec.3, 1997, Orlando, Florida.

30) Ting-Cheng Lu, Venkat Devarajan, and John Wright, "Volume terrain visualization using self-tuning multiple levels of detail,” Proceeding of the International Conference Computer Graphics and Imaging, June 1-4, 1998, Halifax, Nova Scotia, Canada, pp. 158-161.

31) Ting-Cheng Lu, Venkat Devarajan, "Use of optical modeling for load balancing in volume terrain rendering,” Proceeding of the International Conference Computer Graphics and Imaging, Oct. 25-27, 1999, IAESTAD, Palm Springs, CA. Venkat was the. Session Chair.

32) Venkat Devarajan et al., “*Haptic workstation – Minimally invasive surgical simulation,”* SAGES Poster session- SAGES Conference proceedings, April 2000, Atlanta, GA.

33) Venkat Devarajan, Daniel Scott, Daniel Jones, Robert Rege, Robert Eberhart, Charlie Lindahl, Peter Tanguy, Raul Fernandez, *"Bimanual Haptic Workstation for Laparoscopic Surgery Simulation,"* Medicine Meets Virtual Reality 2001, IOS Press, pp. 126-128.

34) Venkat Devarajan, Ganesh Sankaranarayanan, Sarika Pathak, Robert Eberhart, Hamilton, Daniel Jones, *"Laparoscopic Herniorrhaphy Simulator,"* SAGES Scientific session- SAGES Conference proceedings, April 2001, St Louis MO.

35) Venkat Devarajan, Ganesh Sankaranarayanan, *"Technology Demonstration of aspects of laparoscopic surgical simulation,"* The Fifth PHANToM user's group workshop, OCT 28-30, 2000 Given Institute, Aspen, CO.

36) Venkat Devarajan, Sarika Phathak et al, " Simulation of CO_2 insufflation in abdominal cavity for Laparoscopic Surgery," The 10th Annual Medicine Meets Virtual Reality Conference, pp. 382-387, January 23-26, 2002, Newport Beach, CA.

37) Venkat Devarajan, Laks Raghupathi et al, "Simulation of bleeding during Laparoscopic herniorrhaphy," The 10th Annual Medicine Meets Virtual Reality Conference, pp. 382-387, January 23-26, 2002, Newport Beach, CA.

38) Venkat Devarajan, Ganesh Sankaranarayan et al, "Adaptive Hybrid Interpolation Technique for Direct Haptic Rendering of Isosurpfaces," The 10th Annual Medicine Meets Virtual Reality Conference, pp. 448-454, January 23-26, 2002, Newport Beach, CA.

39) R. Agarwal, Y. Bhasin, L. Raghupathi, V. Devarajan, "Special Visual Effects for Surgical Simulation: Cauterization, Irrigation and Suction," 11th Annual Medicine Meets Virtual Reality 2003 Conference, pp. 1-3, Newport Beach, CA, IOS Press.

40) S. Sugavanam, V. Devarajan, "Simulation of a Preperitonial Mesh in Laparoscopic Herniorrhaphy," 11th Annual Medicine Meets Virtual Reality 2003 Conference, pp. 343-345, Newport Beach, CA, IOS Press.

41) Gande A, Devarajan V, "Instructor Station for Virtual Laparoscopic Surgery: Requirements and Design," Computer Graphics and Imaging Conference (CGIM), Honolulu, Hawaii, August 2003, pp.1-7.

42) Gupta V., Devarajan V., "Extraction of Realistic Anatomical Texture from Visible Human Data for Laparoscopic Surgery Simulation." Medicine Meets Virtual Reality 2004, Newport Beach, CA, Jan 2004, pp. 124-126

43) Gopalakrishnan G, Devarajan V, "StapSim: A Virtual Reality-based Stapling Simulator for Laparoscopic Herniorrhaphy" *Medicine Meets Virtual Reality* 2004, Newport Beach, CA, Jan 2004, pp. 111-113..

44) Shweta Kapdoskar and V. Devarajan, “Use of the visible human dataset and 3d studio max to model laparoscopic inguinal herniorrhaphy”, *Medicine Meets Virtual Reality* 2004, Newport Beach, CA, Jan 2004.

45) Y. Shen and V. Devarajan, ”Haptic Inguinal Herniorrhaphy Simulation with a Robust and Fast Collision Detection Algorithm” *Medicine Meets Virtual Reality* 2005, Newport Beach, CA, Jan 2005, , pp. 458-464.

46) “Selective Tessellation Algorithm for Modeling Interactions between Surgical Instruments and Tissues”, Yunhe Shen, Venkat Devarajan, Robert Eberhart, Mark Watson and Jitesh Butala , Proceedings of MMVR 05, Long Beach CA, January 2006, pp. 506-511.

47) " Physically Accurate Mesh Simulation in a Laparoscopic Hernia Surgery Simulator", Xiuzhong Wang, Yunhe Shen and Venkat Devarajan, Proceedings of MMVR 05, Long Beach CA, January 2006, Pgs: 568 – 573.

48) “Modeling Isotropic Organs Using Beam Models for the Haptic Simulation of Blunt Dissections”, Vishal Dalmiya, Guillermo Ramirez and Venkat Devarajan, Proceedings of MMVR 06, Long Beach, CA, 2007, pp. 100-105.

49) “Determination of Key and Driving Points of a Beam Model for Tissue Simulation”, Vishal Dalmiya, Sumit Tandon, Pradeep Mohanraj, Venkat Devarajan, Proceedings of MMVR 06, Long Beach, CA, 2007, pp. 106-108.

50) “Design and Simulation of a Visual and Haptic Assisted Biopsy (ViHAB) System”, Sumit Tandon and Dr Venkat Devarajan, Dr Edmond Richer, Proceedings of MMVR 08, Long Beach, CA, January 29 – February 1, 2008, To Appear

51) Parameter Optimization for 3D Mass-spring-damper Models Xiuzhong Wang and, Venkat Devarajan, proceedings of MMVR 08, Long Beach, CA, January 29 – February 1, 2008, To Appear

6b. Papers Not Reviewed but Presented and Published in Proceedings

1) Y. P. Chen and V. Devarajan, "Considerations in the Selection of an Array Processor for a Large Image Processing Application," Proc. of Electronic Imaging '86, Boston, pp. 634 - 638, November 3 - 6, 1986.

2) V. Devarajan and Y. P. Chen, "Advanced Data and Picture Transformation Systems," Proceedings of Electronic Imaging '86, Boston, MA, pp. 767 - 772, November 3 - 6, 1986.

3) Y. P. Chen and V. Devarajan, "On Improving I/O Performance of an Array Processor Using Dual Ports," Multi '87, SCS Conference, San Diego, pp. 816-822, Jan. 14 - 16, 1987.

4) V. Devarajan, "Perspective Photo Draping for Mission Planning/Mission Rehearsal," Presented at the AFCEA meeting, Lexington, MA, Proc. of AFCEA, pp. 4 - 1 to 4 - 10. September 25, 1991.

5) Rajan Ganesan and V. Devarajan, "Autonomous Generation of a Flexible Feature-Oriented CAD Framework for Interactive Product Modeling," Proc. of INCAF, New Delhi, Vol.1. Dec. 1993, pp. 1-10.

6) V. Sundaramurthy and V. Devarajan, "Reconstruction of 3-D CAD models from 2-D orthographic CAD views," Intl. Con. on CAD/CAM, Robotics and Autonomous Factories, N. Delhi, pp. 71-80, 1993.

6c. Technology Demonstrations at Conference

1) Rajan Ganesan, Kishore Velicheti and V. Devarajan, Demonstration of 2D to 3D conversion technology at the Design World Conference, Los Angeles, Oct. 4-8, 1997.
2) Rajan Ganesan and Venkat Devarajan, "Demonstration of FlexiDesign at Autodesk Southern Regional Summit," Oct 17, 1997, Dallas, TX
3) Rajan Ganesan and Venkat Devarajan, "Demonstration of FlexiDesign and FlexiCheck at the Autodesk Western Regional Summit, Oct. 29, 1999, Los Angeles, CA.
4) Rajan Ganesan and Venkat Devarajan. "Demonstration of FlexiCheck and FlexiDesign," Tank Automotive Command and the National Automotive Center, Warren, MI, Sept. 28, 1999.

6d. Invited or Distinguished Lectures:

1) IEEE Distinguished Speaker -"Image Processing for Flight Simulation," IEEE Boston Section January 22, 1991. IEEE Boston section paid for the trip and expenses.

2) "Perspective Photo Draping for Mission Planning/Mission Rehearsal," Distinguished Lecture Presented at the AFCEA meeting, Lexington, MA, Sept. 25, 1991, Proc. of AFCEA, AFCEA paid for the trip and expenses.

3) "Outstanding R&D Problems in Visual Data Base," Image Society Special Interests Group Meeting, Invited Lecture, June 23, 1993, Tucson, AZ.

4) "Update on the Visual Data Base Generation," Image Society Special Interests Group Meeting, June 23, 1995, Phoenix, AZ.

5) "Feature Extraction From Aerial Imagery," Image Society Special Interests Group Meeting, June 23, 1997, Scottsdale, AZ.

6) *"State-of-the art in VR based surgical simulation"* presented at the Back Institute of the Presbyterian Hospital, Dallas, TX, April 6, 2001.

7) "Collaboration among medical and engineering professionals in the development of Surgical Simulators," Member of distinguished panel, 11th Annual Medicine Meets Virtual Reality Conference, January 22-25, 2003 Newport Beach, CA.

8) " Surgical Simulation", presented at the EE department, IIT Madras, Chennai, India, June 6, 2005

6e. Role as a Reviewer

1) SIGGRAPH paper reviews, 1996 and 1997.

2) IEEE Transactions on Medical Imaging, 1997.

3) McGraw-Hill Book Company - Reviewed a new book on Probability Theory, 1997.

4) Paper Reviewer for Image Society, 1994 and 1996.

5) Paper Review for CAD Journal, 1997.

6) AIAA Flight Simulation Technology Conference papers - 1995, 1997.

7) IASTAD Graphics (Hawaii) Conference Paper Review 2004

8) CIMIT proposal reviews, 2005

9) IPSI Conference Paper review 2005

10) MMVR Conference 2006

11) Visual Computer 2007

7. Activities in professional organizations:

7a. Memberships in Professional Organizations

a) IEEE, Aerospace and Electronics Soc.	Senior Member
b) American Society of Photogrammetry	Member
c) Eta Kappa Nu	Member
d) AIAA	Associate Fellow, 1989 Member, AIAA National Technical Committee for Flight Simulation 1990-2003
e) IMAGE Society	Vice President of Data Base Committee

7b. Workshops and Conferences Organized:

1) SPIE Conference on Digital Image Processing Applications, Co-chairman, January 1989, Los Angeles.

2) Image Society Workshop on "Visual Database Issues" at UTA in summer of 1991.

3) IFIP 5.1 International Workshop on "Virtual Prototyping" at ARRI, May, 1995. General Chairman and Technical Co-chairman.

8. Work in progress:

8a. Doctoral Dissertations and Masters Theses under Supervision:

Name	***Due Date***	***Tentative Dissertation Title***
Ganeshramji Iyer	Dec., 2008	A context-aware inference system to capture design rationale from legacy CAD
Ninad Thakoor (jointly with Jean Gao of CSE)	Dec., 2006	TBD

	Name	***Due Date***
1.	Arindamnath Das	August, 2008
2.	Koyel Chatterjee	December, 2008
3.	Dibbesh Adhikari	August 2008
4.	Sudeep Sharma	May 2008
5.	Kumar Abhijitsingh	May 2008
6.	Ravi Kiran	May 2008

9. Other Professional activities

9a. Consulting Activities:

1985-1986	Defense Intelligence Agency, Intelligence workstation development.
1990	US Navy/McDonnell Douglas Training Systems Co. Procurement of an advanced visual system. This consulting effort resulted in a research contract to UTA.
1991	GC America, HDTV compression/decompression techniques for digital storage media. Worked with Dr. K.R.Rao and his students.
1992	Loral Vought Corp. Visual Database Generation Technology. Resulted in a research contract to UTA.

1991 - 1992 Planning Research Corporation.
Photo texture processing for Project 2851.

1993 May- Sept. NAVAIR, Washington DC.
Mission Rehearsal Systems Evaluation.

1994 May - Sept.1994 and 1995 May - Dec. 1995
Hughes Training Inc., Arlington, TX
VR Trainers, Resulted in a Research Contract for UTA in 1995

2004 Summer Sevin Rosen Funds (A venture capital partnership), Dallas, TX
Investigation of the State of the Art in Medical Simulation
Resulted in one of the partners becoming EE Industry Advisory Board Member

2005 Summer Lockheed Martin Missile and Space.

9b. National-Level Committees and Boards

a) National Committee AIAA Technical Committee on Flight Simulation Activity
Member (1992-Present)

b) National Committee Invited to be part of a Department of Defense-wide committee on Scene Visualization. Activity
Member (October, 1997 - Present)

10. Funded Contracts and Grants: [In the following, except for the ARRI membership funds, one gift funding and equipment grants, all others included overhead earnings for the University. All contracts including ARRI were charged some of my time along with graduate student support]

Contracts in which I was a Co-Principal Investigator

1. Rockwell International, "NTSC codec algorithms development," 8-1-1976 - 8-1-1977, $55,000, Co-PI with K.R.Rao.

2. Automation and Robotics Research Institute, "Non-contact measurement for reverse engineering of aircraft parts," 4-1-1990 to 12-31-1990, $47,500, Co PI with O. R. Mitchell and M. Fitzgerald.

3. ARP from Texas state Higher Education Coordinating board, “Voxel-based haptic modeling for laparoscopic surgery simulation,” co-PI: Dr. Dan Jones of UTSWMED, $150,000. 1-1-2000 to 5-31-2002**.**

4. ATP to Texas state Higher Education Coordinating board, “Insertion of legacy design and analysis into a collaborative virtual prototyping environment,” co-PI: John Mills, $198,658., 1-1-2002 to 2-1-2003.

Contracts in which I was the sole Principal Investigator

1) General Dynamics/Software Systems Inc., "Low cost visual scene generation using workstation level image generators," 9-1-1990 to 12-31-1991, $56,000.

2) McDonnell Douglas Training Systems Co., "Rapid response multi-sensor imaging simulation," 2-1-1991 to 9-30-1991, $26,338.

3) Rockwell International, "Study of rearrangeable multi-stage networks," 1-1-1991 to 12-31-1991, $25,368.

4) Automation and Robotics Research Institute, "Construction of 3 dimensional CAD models from 2 dimensional data," 1-1-1991 to 8-31-1991, $15,000.

5) E- Systems/LTV Aero Products Division, "Conversion of rasterized three view drawings to scale corrected vector drawings," 9-15-1991 to 9-15-1992, $100,000 (ARRI memberships).

6) Alcatel Network Systems, "Study of multistage networks - RDX 33," 10-1-1991 to 9-30-1992, $28,981.

7) LTV Missiles and Electronics, "Optimal terrain and model representation in a visual data base ," 10-1-1991 to 1-31-1992, $13,000.

8) AFCEA grant for travel to Boston to deliver an invited paper on "Image draping for mission planning," $1000, Sept. 1991.

9) Image Data Corporation, A grant of a copy of the PARA/SERIES software system to perform image processing. Value $10,000, March, 1992

10) NASA, Johnson Space Center, "Image based navigation studies," 5-1-92 to 5-1-1993, $60,000. Based on winning this peer-reviewed proposal my student David McCoy was awarded a Texas Space Commission Fellowship to perform research under my supervision, $10,000.

11) LORAL/Vought Systems, "Optimal terrain and model representation in a visual data base," 9-1-1992 to 12-31-1992, $15,000.

12) Alcatel Network Systems, "Rearrangement algorithms for a multi-casting network," 12-1-1992 to 11-1-1993, $15,000.

13) Hughes Training Incorporated, An equipment grant of two state-of-the-art real-time image generation systems, value $112,000, March, 1993.

14) E-systems, Greenville and Vought Aircraft, "Conversion of rasterized three view drawings to scale corrected vector drawings," 10-1-1992 to 9-31-1993, $100,000 (ARRI memberships).

15) Alcatel Network Systems, "Rearrangement algorithms for a multi-casting network, 9-1-1993 to 9-1-1994, $35,000.

16) Hughes Training Inc., “Visual Data Base Generation Technology,” 1-1-1995 to 5-31-1996, $65,000.

17) AAMRC/ State Matching Pool/E-Systems, “Implementation of 2D to 3D CAD Conversion,” 1-1-95 to 1-1-96, $100,000.

18) Hughes Training Inc., “Parallel Rendering of Voxel Data,” 6-1-1996 to 12-31-97, $40,000.

19) Raytheon TI Systems, “Intelligent Polygonal Tiling for Efficient Rendering,” 9-1-97 to 3-1-98, $20,000.

20) Axes Technologies, Gift towards Research, $85,000 plus three fully configured PC's, 1998-1999.

21) Gift from Dr. Chandra Sekhar, “Trade study for a Plastic Surgical Aid,” $15,000, 1-1-2000 – 12-31-2000.

22) ATP to Texas state Higher Education Coordinating board,” A Virtual Reality Based Minimally Invasive Surgery Trainer,” $225,000, 1-1-2002 to 12-31-2003.

23) National Institute of Standards and Technology, “Knowledge-based Product Representation for Next Generation of CAD,” 9/1/00 - 8/31/02, $93,600.

23) Axes Technologies, Gift towards Research, $12,000, 2003.

24) UT Southwestern Medical Center, “Development of a bimanual mesh placement simulator for laparoscopy”, $64,000, 7/1/03-9/31/03.

25) Axes Technologies, Gift towards Research, $19,000, 2004.

26) Lockheed Martin Missiles and Control Division, Dallas, TX, “Mathematical foundation of targeting precision and accuracy”, $75,000, 8/1/07-12/31/07

D. University and Community Services

1. Committee Activities (Department, College and University)**:**

a) University-wide Activity	<u>Faculty Senator - 1992 - 1997</u>
Activity	Member of the senate and several sub-committees (Raised the issue of increasing admission standards several times. This eventually helped to bring up the issue at the

	Undergraduate Assembly. Worked closely with Prof. Hermann in the senate and Prof. Charlie Smith of the Undergraduate Assembly)
Activity	Post Tenure Review Committee member (Helped draft a faculty-friendly Post-tenure review document)
Activity	Budget Liaison Committee (1995-present)
Activity	College of Engineering Representative in the Presidential Advisory Committee (1997-1998)
b) Departmental Committee:	Diagnostic Committee
Activity	Member 1990, 92, 95, 96, 97
c) Departmental Committee:	Diagnostic Committee
Activity	Chairman of Circuits and Systems - 1991, 1993
d) Departmental Committee:	Fifteen Ph.D. committees (Other than my students) Seventeen masters' thesis committees (Other than my students)
Activity	Member
e) **Graduate Studies Committee**	Working on significantly improving the quality of graduate students entering the EE program, streamlining the GTA selection process, improving the quality of the dissertations produced, helping faculty with graduate student resources in order to write more proposals etc. In effect, make a significant difference to the graduate study program quality at UTA's EE department. 2007 activity : Direct PhD Program
Activity	**Chair – 2003 – Present**

2. Student academic advising:

Have assisted the graduate advisor during the admissions process with dozens of Asian students from the Subcontinent. Advised the students on selection of courses, research areas etc.

3. Participation in extracurricular student activities [See attachment for more details on this activity]: Part of several cultural activities. Faculty Advisor to the Indian Music, Art and Cultural Society (IMACS) since inception to present. IMACS won the best student organization award in 2002.

4. Community Service [See attachment for more details on this activity]: President of MTS, an Indian cultural organization, 1986-87, Committee member of MTS 1982-1986, Committee Member, Indian Fine Arts Association, 1992-1993. Founder of and Faculty

Advisor to Indian Music, Art and Cultural Society, 1996 - Present. President-elect Indian Fine Arts Academy 2007-2009.

E. Accomplishments at Vought Corp./Lockheed Martin

1987 – 1990 Engineering Project Manager, US Navy's TOPSCENE. Responsible for technical performance for the multi-million dollar mission planning and rehearsal system. TOPSCENE is an all-digital, integrated photo-based data base and image generation system for an out-the-window and sensor visual simulation. In this position I supervised twelve engineers.

TOPSCENE image related functions included real-time perspective warping, tracking, seeker modeling, efficient windowing, etc. **It is presently the premier mission rehearsal system of the US Navy, having been fielded in several aircraft carriers and on-shore bases.**

1984 – 1987 Technical Project Manager, US Navy's Intelligence scene sourcing system. Overall technical responsibility on this $14 million project, managed from concept to implementation. Managed 14 software and hardware engineers. **The system is the first to implement digital photogrammetric techniques on a large scale and is still being used to provide dozens of country-sized databases.**

Responsible for database related R&D. Performed successful experiments on the generation of a registered IR and SAR database from a source consisting of EO images and associated digital terrain elevation data.

1980-1984 Computing Engineering Specialist, Responsible for the development of visual system concepts related to low altitude high speed flight simulation. Supervised four engineers. Developed a two-channel photo-based visual concept for use on a helmet mounted display and a real-time target insertion technique.

1979-1980 Senior Computing Engineer, Co-developed with John T. Hooks, the first photo-based visual system for flight and sensor simulation. Developed an image mapping technique and the theoretical basis of a perspective panoramic view used to provide 6-DOF visuals.

Continuing Education

[1] VAX System Overview, taught by DEC personnel, Sept. 1985.
[2] Digital Image Processing Applications, George Washington University School of Engineering, Washington DC, July 15-18, 1985.
[3] Executive Presentation Skills, Communispond Inc., May 1987.
[4] Numerix Microcode, taught by Numerix Corp., July 1987.

F Community Activities

A. Indian Music Arts and Cultural Society (IMACS)

Popular culture is exciting and gets the attention of local populations the world over with breathless urgency. And yet, just as quickly it fades. It is the time-tested traditional aspects of each culture that seem to survive over the long haul. The Beethovens, Mozarts, Tygarajas, classical music, ballet dancing, Bharatha Natyam…these are the typical cultural elements that remain everlasting in the middle of the break neck Internet culture that we are in today. And yet, these elements need some nurturing, lest they be trampled over by the popular culture of the day. Hundreds of grass roots organizations all over the US try to do just that for Western art forms. There is a need to perform a similar service for the ethnic cultures in an increasingly diverse USA. IMACS at UTA is dedicated to performing this important and humbling duty for East Indian art forms. Classicism is the key to IMACS' vision and it is what distinguishes us from other organizations. I personally take great pride in having been the founder of this student organization and continually being a very involved advisor, because it is emotionally fulfilling, philosophically satisfying and just plain fun for all.

Indian students who come in as fresh graduate students tend to be somewhat timid given the alien culture to which they are exposed. Within IMACS and over a short time, they blossom in to outspoken representatives of their constituencies, be it arguing for a certain theme for the upcoming Aradhanaa (an elaborate cultural show), collaborating with other organizations, running free cultural shows versus paid ones, helping incoming students etc. Hot debates ensue. However, at the end of these discussions, they embrace the final decision with grace. I find this phenomenon fascinating and I am convinced this prepares them just that much more to face the real world.

IMACS' reputation among the students in general and, Indian students in particular is impeccable. It stands for high standards without being snobbish. It stands for tradition while encouraging experimentation with fusion music and the smooth melding of the popular with the classical. Western instrumentalists and drummers from UTA's music department regularly accompany the IMACS Indian orchestra. IMACS stands for tolerance and understanding as evidenced by the cricket match that we played this year with the Pakistani Students Association in a spirit of friendship. We played the match with fierce competition (of course!) but were gracious and magnanimous in victory. Many new friendships were made between Indian and Pakistani students on the day of the match. I am especially proud of this event given that India and Pakistan have fought five devastating wars.

We won the Outstanding Student Organization for 2001-2002 and have been nominated twice since for this award.

Indian Fine Arts Academy (IFAA)

IFAA is to North Texas what IMACS is to UTA. The intent of IFAA is to bring and expose to the N.Texas audiences, the rich classical music and dance of India. This organization conducts classical music and dance programs featuring some of the best musicians of India at approximately one a month to which all are welcome. In addition, IFAA also promotes the local talent in special programs. These programs are held typically at the Dallas Museum of Arts in

downtown Dallas. IFAA requests and receives some financial help from the city of Dallas as well. I have been an executive committee member of the organization. Now I have been elected the President for the 2007-09 term. The most satisfying aspect of this role, once again is that this organization brings together Indians and Americans together in to an environment of mutual learning and respect.

Metroplex Tamil Sangam (MTS)

MTS brings Tamil culture from South India to the Dallas Ft. Worth metropolitan area (usually referred to locally as the Metroplex). I am a past Executive Committee member and a President of this organization which runs around 10 programs a year (literary, musical, dramatic and social programs) involving adults and children. Several hundred people of this area attend each of these programs. This organization helps spread awareness of Tamil culture and helps the new immigrant children with their identity as productive members of the American society while being cognizant of their heritage.

G. Commercialization and Entrepreneurial Accomplishments

1990-Present: I came to UTA in 1990 with an understanding with Dr. Robert McElroy, the Dean of Engineering and Dr. Robert O. Mitchell, the Chair of the Department of EE that I would attempt to commercialize any technology that I helped develop in my laboratory. The following are the highlights of my accomplishments as the part-time CEO of my company called Imagecom Inc. [www.aspire3d.com]

- Incorporated the company in May, 1990
- Licensed the 2D-3D conversion technology developed by my students and I at ARRI to Imagecom
- The License was later converted to a technology assignment
- Imagecom continued to develop the product called FlexiDesign with funding from US Army and USAF
- Raised one million dollars in venture funding
- Launched an ASP service in 1997
- Versions of the product were developed for all the major CAD systems
- Imagecom filed patents for technology that it had developed (the technology at UTA at that point had been all published and become prior art)
- In 2005, Imagecom won a $1.025 million contract to customize the software for US Army TACOM. The work on that contract began on Oct 1, 2006
- Several UTA students have been made industrial Graduate Research Assistants by Imagecom. So far 12 students at UTA have benefited by Imagecom as part time employees, full time employees or IGRAs. All Imagecom employees are UTA graduates.
- Presently Imagecom is housed in the Arlington Technology Incubator as one of the very few companies that has successfully commercialized UTA-developed technology.

- Imagecom won a $2 million earmark contract. The work on this contract began Oct 1, 2007. Imagecom employs five full time software engineers, four of whom are UTA graduates. Another UTA student has been hired as a Graduate Research Assistant.