

CURRICULUM VITAE

1. NAME: Anoop Chawla

2. CURRENT POSITION and ADDRESS:

Associate professor,
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3. PERMANENT ADDRESS:

c/o Shri MM Chawla.
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Bhopal 462016, INDIA

4. DATE OF BIRTH: 28th August, 1964.

5. ACADEMIC QUALIFICATIONS:

1. PhD, Indian Institute of Technology Kanpur, 1993, Broad Area / Keywords: *Artificial Intelligence, Model based reasoning*, Topic of the thesis: *Model Building Approach to configurational design: Relating multilevels of knowledge*, Under the supervision of: Prof R Sangal, Department of Computer Science and Engineering.
2. Btech (Mechanical Engineering), Indian Institute of Technology, Delhi, 1985 CGPA 9.49 on a 10 pt scale.

6. WORK EXPERIENCE:

1. Assistant Engineer, at the CAD unit of Tata Iron and Steel Co Ltd, Jamshedpur, from July 1985 to December 1990.
2. Assistant Professor, Department of Mechanical Engineering, Indian Institute of Technology Delhi, Hauz khas, New Delhi, May 1993 to January 2000.
3. Visiting Faculty, Department of Computer Science and Engineering, University of Illinois at Urbana Champaign, Aug 1999 to December 1999.
4. Associate Professor, Department of Mechanical Engineering, Indian Institute of Technology Delhi, Hauz khas, New Delhi, January 2000 onwards.

6A. Administrative Experience

1. Chairman, Grades and Registration, IIT Delhi, 1996 – 1998.
2. Chairman, Timetabling Committee, IIT Delhi. 1998-1999.
3. Warden, Karakoram Hostel, IIT Delhi, 1995 - 1998
4. President, Mechanical Crasfts Society, IIT Delhi, 1996 – 1999.
5. Member Library Computerization Minotoring Committee, IIT Delhi, -96
6. In charge of various labs in Dept of Mech Engg, IIT Delhi.
7. Sectretary, Department Research Committee, ME Dept IIT Delhi. 1995 - 1997.
8. Secretary Faculty Board, Mech Engg Dept., IIT Delhi. 1997 – 1999.

7. AREAS OF INTEREST:

My areas of interest include |Artificial Intelligence, Computer Graphics and Design Methodology, and Modeling in CAD / CAM / CAE. Some of the detailed topics are as follows:

1. Modeling in CAD / CAM / CAE: Modeling of vehicles for safety in crashes, Modeling using Finite elements and rigid body dynamics, Computer integrated manufacturing, Design Methodology.
2. Artificial Intelligence related areas: Knowledge based systems, Model based reasoning, Knowledge acquisition, Machine learning, object oriented programming, Knowledge Based systems applications in engineering (in design, in engineering diagnostics, in manufacturing etc).
3. Computer Graphics and related areas: Surface and solid modeling Computational geometry, and Computer aided design.

8. MEMBERSHIP OF PROFESSIONAL BODIES:

- i. Fellow, Institute of Electronics and Telecommunication Engineers of India.
- ii. Member Indian Society of Mechcnical Engineers(ISME)
- iii. Member, Institution of Engineers, India

9. COURSES TAUGHT:

Undergraduate Level:

- i. Computer Aided Mechanical Design (Btech ME elective, 400 level)
- ii. Knowledge Based Systems Applications in Mechanical Engineering (Btech ME / MF elective, 400 level)
- iii. Computer Integrated Manufacture (shared) (Btech MF core, 400 level)
- iv. Machine Design (shared) (Btech ME core, 300 level)
- v. Machine Design Lab (shared) (Btech ME core, 300 level)
- vi. Mechanical Vibrations (shared) (Btech ME / MF elective, 400 level)
- vii. Instrumentation and Control, (Btech ME core, 300 level)
- viii. Graphic Science (I & II), (shared) (Btech all disciplines, core, 100 level)

- ix. Machine Design (Core for ME and PF, 200 level)
 - x. Computer Graphics (300 level, for Computer Science and other engineering students at the University of Illinois at Urbana Champaign)
 - xi. File Systems (300 level, for non-Computer Science students at the University of Illinois at Urbana Champaign)
- (ME: Mechanical Engineering; MF: Manufacturing Science and Engineering)

Post Graduate level:

- i. Computer Graphics (Mtech equiv, Advanced level course in Computer science organized by Institute of Electronics and Telecommunication Engineers, India)
- ii. Artificial Intelligence (Mtech equiv, Advanced level course in Computer science organized by Institute of Electronics and Telecommunication Engineers, India)
- iii. Computer Aided Mechanical Design (core course of MTech- Design of Mechanical Equipment).
- iv. Computer Graphics (for Computer Science and other engineering students at the University of Illinois at Urbana Champaign)
- v. File Systems (for non-Computer Science students at the University of Illinois at Urbana Champaign)

Industry oriented courses

- i. An Introduction to Finite Elements (shared)
- ii. CAD / CAM (shared)
- iii. Vehicle Crashworthiness and Safety Standards (shared)
- iv. International course on prevention and control of traffic accidents and injuries (Selected lectures on use of computer modeling for safe design of vehicles)
- v. Training in CAD / CAM / CAE using Pro/Engineer.
- vi. Co-cordinator of QIP course on CAD

10. INFRASTRUCTURE DEVELOPMENT RELATED WORK:

- i. Setup a new lab for work in the area of vehicle crash simulation.
- ii. Set up a new lab for work in the area of "AI / Simulation / Robotics / CAD / CAM"
- ii. Set up a new lab for teaching CAD / Computer Graphics to over 85 persons simultaneously : Computer Aided Graphics Instruction Lab.

11. CONFERENCES / SEMINARS / WORKSHOPS ORGANIZED:

- i. Co-coordinator of QIP course on CAD, December 1997.
- ii. Member Organizing Committee, 11th ISME Conference, 3-5th February, 1999, IIT New Delhi.
- iii. Member Organizing Committee, Indian Conference on Computer Vision, Graphics and Image Processing, December 21-23 1999, IIT New Delhi.
- iv. Organized a "Technology Appreciation Seminar in CAD" on October 10, 1998.
- v. Vice chairman of the 4th AI in Design Conference held at Lisbon, Portugal, from 20-23 July 1998.
- vi. Member, Organizing Committee, IUTAM-IITD International Winter School on Optimum Dynamic Design (INSODYD), December 15-19, 1997, IIT Delhi.

- vii. Vice chairman of the 3rd AI in Design Conference held at Stanford, USA, from 24-27 June 1996.
- viii. Member of advisory committee of the 2nd AI in Design Conference held at CMU, Pittsburg, in June 1994.
- ix. Coordinator of workshop on “Systems approach to manufacturing competiveness - Scope for Industry Institute interaction”, Department of Mechanical Engineering, IIT Delhi, 1994.
- x. Member Organizing Committee for 11th National Conference on Machines and Mechanisms, Dec. 2003.

12. AWARDS WON:

- i. The AICTE career award for young scientists for the year 1998.
- ii. The NK Iyengar memorial medal for the paper titled "Expert System for DFM of Die Cast Components" published in the Institution of Engineers Journal, Vol 78, February 1998.

13. LIST OF PUBLICATIONS: (List of authors is not necessarily in the published order)

List of papers in journals: (Accepted / Published)

- 1. Nakatani T, Sakurai M, Chawla A and Mukherjee S, A methodology for Motorcycle-vehicle Crash Simulation -Development of Motorcycle Computer Simulation Model, Jari Research Journal, No.10, Vol.23, October 2001, pp.530-533.
- 2. KR Bhupal Reddy, S Wadhwa and A Chawla, Application of back propagation artificial neural networks in cellular manufacturing, Journal of Production Engineering, Institution of Engineers, March 2001.
- 3. Chawla A, Mukherjee, S, Mohan D, Singh M, Sakurai M and Nakatani T, “A Methodology for car – motorcycle crash simulation, Jari Research Journal, 2001, Vol 23, No 2, pp 18-21.

4. D Mohan, J Kaizer, KS Bawa Bhalla and A Chawla, Impact Modeling Studies for a three wheeled scooter taxi, Journal of Accident analysis and Prevention, Vol 29, No 2, 1997, PP161-170.
5. A Chawla, K Raviraju and Amit Gupta, Expert System for DFM of Die Cast Components, Journal of Mechanical Engineering, Institution of Engineers, India, Vol 78, February 1998.
6. A Chawla, D Mohan and V Sharma, Computer simulation of bus roll over crashes, Indian Journal of Transport Management, March, 1998.
7. A Chawla, Dinesh Mohan, Vivek Sharma and Janusz Kajzer, Safer Truck front design for pedestrian impacts, Journal of crash prevention and injury control, March 2000, Vol 2(1), pp 33-43.
8. KR Bhupal Reddy, D Prasad Raju, S Wadhwa and A Chawla, Applications of Simulated annealing to the cell formation, Industrial Engineering Journal, Vol XXIX, No 8, August 2000, pp 2-26.
9. A Chawla, JS Rao and A Pathak, Blade Life - a comparison by cumulative damage theories, To appear in the ASME Journal of turbo machinery.
10. S Mukherjee, A Chawla, D Mohan, M Singh, M Sakurai and T Nakatani, Preliminary findings from motor cycle – car side impact simulations, to appear in the Jari research Journal.
11. A Chawla, S Mukherjee, D Mohan, D Bose, JP Singh, M Sakurai and T Nakatani, Sensitivity of Car – Motorcycle side impact crash to appear in the Jari Research Journal.
12. A Chawla, Use of Computer Modelling Techniques to optimize safety of Indian Vehicles, to appear in the Road Safety Digest.
13. AK Darpe, A Chawla and K Gupta, Analysis of the response of a cracked Jeffcot rotor to axial excitation, Vol 249 No 3, Journal of Sound and Vibration, 2002.
14. A.K.Darpe, K.Gupta and A.Chawla, Experimental Investigation of the response of a cracked rotor to periodic axial excitation, to appear in Journal of Sound and Vibration.
15. A.K.Darpe, K.Gupta and A.Chawla, Dynamics of a two crack rotor, Vol 259, No 3, 2003, Journal of Sound and Vibration.
16. J. S. Rao, Ashish K Darpe, A. Chawla, Kapil Bharati, D.A.Roy, A. V. Rama Rao, "Development Of Online Diagnostic System Software For Turbogenerator Set Of

Kakarapara Atomic Power Station", Advances in Vibration Engineering, Vol 1, No 4, 2002.

17. A Chawla, P Mahajan and KL Mohan Rao, Impact Modelling of helmets, **submitted to the Crash Prevention and Injury Control journal.**
18. A Chawla, P Mahajan and KL Mohan Rao, Redesign of helmets using Impact modelling, **submitted to the Defence Science Journal.**
19. A.K.Darpe, K.Gupta and A.Chawla, "Transient Response And Breathing Behavior Of A Cracked Jeffcott Rotor", **to appear in** Journal of Sound and Vibration.
20. S Mukherjee, A Chawla et al, Modeling of head impact on laminated glass wind shields, **submitted to the Crash Prevention and Injury Control Journal.**
21. Dileep Kumar, A Chawla, S Mukherjee, T Nakatani and M Ueno, Prediction of Crushing behaviour of honeycomb structures, Crash Prevention and Injury Control Journal, Vol 8, No 2, 2003 pp 81-88.
22. S Mukherjee, A Chawla, D Mohan, M Singh, T Nakatani and M Sakurai, Modeling Car – MC Sideimpact Simulations, **submitted to the Crash Prevention and Injury Control Journal.**
23. A. Chawla, S. Mukherjee, D. Mohan, Dipan Bose, Prakash Rawat, M. Sakurai, T. Nakatani, Issues in Car – Motor cycle front crash simulations, **submitted to the Crash Prevention and Injury Control journal.**
24. S. Mukherjee, A. Chawla, D. Mohan, M. Singh, M. Sakurai, T. Nakatani, Motorcycle-wall crash: simulation and validation, **submitted to the International Journal of Crashworthiness.**
25. A.K.Darpe, K.Gupta and A.Chawla, Coupled bending, longitudinal, and torsional vibrations of a cracked rotor, **to appear in** the Journal of Sound and Vibration.

List of papers in Conferences: (Accepted / Published)

1. Darpe A, Gupta K and Chawla A, Response of a rotor with an unstable propagating transverse crack, Proceedings of IMPLAST 2003.
2. Chawla, S. Mukherjee, D. Mohan, Rajiv Kr, Tushar Gavade, FE Simulation studies of a three wheeled scooter taxi, Proceedings of China PAM, Beijing, Nov 17-18, 2002.
3. Chawla, S. Mukherjee, D. Mohan, Jasvinder Pal Singh, Nadeem Rizvi, Crash simulations of a three wheeled scooter taxi (TST), Proceedings of ESV 2003 held in Nagoya Japan, in May 2003.

4. Chawla, S. Mukherjee, D. Mohan, Dipan Bose, M. Sakurai, T. Nakatani, FE simulations of car - motor cycle frontal crashes - validations and observations, Proceedings of ESV 2003 held in Nagoya Japan, in May 2003.
5. A Chawla, S Mukherjee, and D Mohan, Impact biomechanics in two wheeled and three wheeled vehicles, Proceedings Symposium on Large Deformations, Sept 1, 2002, New Delhi.
6. S Mukherjee, A Chawla et al, Modeling of head impact on laminated glass wind shields, Proceedings of IRCOBI 2000, Montpellier, France, September 2000.
7. S Mukherjee, A Chawla, D Mohan, M Singh, T Nakatani and M Sakurai, Modeling Car – MC Sideimpact Simulations, Proceedings of IRCOBI 2001, Isle of Man, UK, October, 2001
8. T Nakatani, M Sakurai, Chawla A and Mukherjee S, A methodology for motorcycle-vehicle crash simulation -development of motorcycle computer simulation model, to appear in JSAE, October 23-25, 2001
9. T Nakatani, M Sakurai, Chawla A and Mukherjee S , Motorcycle-vehicle crash simulation construction of motorcycle model, to appear in JASME, September 21, 2001
10. JS Rao, R Sreenivas and A Chawla, Analytical and Experimental Investigations of misligned rotors, Proceedings of ISROMAC-9, 2002.
11. JS Rao, R Sreenivas and A Chawla, Experimental investigation of misaligned rotors, Proceedings of ASME Turbo Expo 2001.
12. J. S. Rao, Ashish K Darpe, A. Chawla, Kapil Bharati, D.A.Roy, C.K. Pithawa, Umesh Chandra, A. Rama Rao, N.P.S. Gill, " Development Of Online Diagnostic System Software For Turbogenerator Set Of Kakrapar Atomic Power Station", VETOMAC-I, 2000.
13. KR Bhupal Reddy, S Wadhwa and A Chawla, Simulated annealing based cell formation methodology for parts with multiple routings, Proceedings of the third international conference on operations and quantitative management, University of Western Sydney, Sydney, Australia, Dec 2000.
14. A Chawla, JS Rao and A Pathak, Blade Life - a comparison by cumulative damage theories, ASME TURBO EXPO - 99, organized by ASME in Indianapolis in June 1999.
15. A Chawla and S Mukherjee, Graphics Science in Engineering Education, Proceedings of the 11th ISME conference, held in Delhi from 3-5, 1999.

16. A Chawla, S Pandey and NR Naidu, An expert system for DFM of welded parts, Proceedings of the SERC School on Advanced Manufacturing Technology, held from November 2-14, 1998 in Delhi.
17. A Chawla, D Mohan and V Sharma, Computer simulation of bus roll over crashes, Proceedings of IMECE-98.
18. A Chawla, Vivek Sharma, J Kajzer and D Mohan, Safer truck Front Design, Proceedings of the 1998 IRCOBI conference on the biokinetics of impact, held in Goteberg, Sweden, September 16-18, 1998.
19. A Chawla, S Wadhwa and K Rama Bhupal Reddy, Analysis of comparative performance studies on Job Shop and Cellular Manufacturing Layouts, Proceedings of the 14th International conference on CAD/CAM Robotics and Factories of the future, Nov 30 - Dec 3, 1998 Coimbatore India.
20. Chawla A, Sharma V and Mohan D, MADYMO as a tool to analyze India specific traffic conditions, MADYMO User's meet, 1998.
21. A Chawla, KR Bhupal Reddy, D Prasad Raju and S Wadhwa, Simulated annealing - An approach to the cell formation, Proceedings of the 2nd International conference on Engineering Design and Automation, held at Hawaii, Aug 9-12, 1998.
22. A Chawla, Wadhwa S and KR Bhupal Reddy, Part mix perturbations in cellular manufacturing - a simulation study, Proceedings of AIMTDR'98, held from Dec 1-3, 1998
23. Chawla A, Wadhwa S, D Prasad Raju and KR Bhupal Reddy, Artificial Neural Networks - An application in cellular manufacturing, Proceedings of the 2nd International Conference on Engineering Design and Automation, held in Hawaii, from August 9-12, 1998.
24. H Hirani and A Chawla, Journal Bearing Design : An integrated Approach, submitted for the Fifteenth National Convention of Mechanical Engineers to be held in Hyderabad from December 16-18, 1999.
25. H Hirani and A Chawla, A simplified inverse solution to the liquid lubricated head disk interface, submitted for International conference on Tribology of Information Storage Devices, TISD-'99.
26. H Hirani and A Chawla, Tribology of Information Storage Devices, submitted for the National Conference on machines and mechanisms, 1999.

27. A Chawla and Vivek Sharma, Crash modeling of Indian Bus structure, Proceedings of the 4th World Congress on injury prevention and control, May 1998, Amsterdam, Netherland.
28. A Chawla, R Chattopadhyaya, Design of a creep testing machine for industrial ropes, Proceedings of the NACOMM 1997 held in IIT Kanpur, in December 1997.
29. A Chawla and Amit Gupta, Use of IT tools for DFM of Die Cast Components, Proceedings of the National Conference on Information Technology for Industrial and Organization Development, held in October 1997, in Delhi.
30. D Mohan and A Chawla, "Use of Computer Modeling Techniques to optimize safety of country specific vehicles in impact", Proceedings of the International conference on new frontiers in biomedical engineering, Tokyo, Japan (1997), PP281-284.
31. Rao JS, Chawla A and Duttagupta C, Development of an off-line expert system for the condition monitoring of an aircraft engine, Proceedings of the 6th International Symposium on Transport Phenomenon and Dynamics of Rotating Machinery, 1996.
32. D Mohan, Janusz Kajzer, KS Bawa Bhalla and Chawla A, Impact Modeling Studies for a three wheeler scooter taxi, Proceedings of IRCOBI'95, held at Brunnen, Switzerland, September, 1995.
33. Chawla A and Sangal R, An Intelligent Design System, Proceedings of the 7th AI in Engineering Conference, Waterloo, Canada, 1992.
34. Chawla A and Sangal R, Functional Reasoning in Configurational Design, Proceedings of the 2nd AI in Design Conference, 1992.
35. Chawla A and Sangal R, Abduction in Design, Proceedings of the 4th UNB AI Symposium, University of New Brunswick, Canada, 1991.
36. Chawla A and Sangal R, Capturing Design Knowledge, Proceedings of the Knowledge Acquisition Workshop, Banff, Canada, 1991.
37. A Chawla and S Ray, Design and drafting on PC based systems, Proceedings of the 23rd Annual convention of the Computer Society of India, held from January, 6-9, 1988 in Madras.

14. PROJECTS / CONSULTANCIES COMPLETED

1. Setting up of Computer Aided Graphics Instruction Lab, ICICI, Rs 8.0 million.
(Other investigators: Dr S Mukherjee, Drs MR Ravi, PVM Rao, Profs VP Agarwal and K Athre)

2. Development work on TG sets of 220MW NPPs in the areas of a. Fatigue analysis of Lp blades and b. On line diagnostic System, Funded by BRNS, Total Project cost Rs 1.5 million (approx). (Other investigators: Prof JS Rao, Prof RK pandey)
3. Design of a Creep Testing Machine for Fibre Ropes, AICTE, Rs 0.5 million. (PI: Dr R Chattopadhyaya)
4. Development of Simulators to assist proactive shopfloor control, DOE, Rs 3.4 million. (PI: Dr S Wadhwa)
5. An automated approach to manufacturability based design of die cast components, DST, Rs 0.15 million approx.
6. Modernisation of Design Engineering Laboratory, MHRD, Rs 1.5 million (as CI, PI: Prof VP Agarwal)
7. Knowledge Based Environment for Engineering Design, Funded by IIT, Total Project Cost Rs 50,000/-.
8. Safety of Front Seat Passengers: Analysis of Vehicle Performance, TELCO, Rs 5 lacs. (PI: Prof D Mohan) (consultancy)
9. Safer Truck Fronts: Phase I, Volvo Truck Corporation, US\$30,000.00 (PI: Prof D Mohan) (consultancy)
10. Shortlisting of Junior Engineers, NOIDA, Rs 2.2 lacs (Other consultant: Dr S Sanghi) (consultancy)
11. Consultancy to Noida, The NOIDA authority, 45,000/-, Aug 2000, 5 months, Dr A Chawla, Dr S Sanghi AM (consultancy).
12. Consultancy to Noida, The NOIDA authority, 200,000/-, Dec 2000, 6 months, Dr A Chawla, Dr S Sanghi AM (consultancy).
13. Prediction of Safety of head and neck from bullet impact without penetration on a helmet, Delhi Police, Rs 0.17 million (PC: Dr S Mukherjee) (consultancy)
14. Modeling of car-motor cycle crashes, Japan Automobile Research Institute, US\$37000 (Other consultants: Prof D Mohan, Dr S mukherjee, Dr P Mahajan) (consultancy)
15. Crash Simulation of the car – MC crash using Pamcrash (Ph – II), Japan Automobile Research Institute, 14,35,438/-, (Other consultants, Dr S Mukherjee, and Prof D Mohan) (consultancy).

16. Sample studies regarding car-mc simulation – I, Japan Automobile Research Institute, 184,186/-, (Other consultants Dr S Mukherjee, and Prof D Mohan) (consultancy).
 17. Consultancy in conducting CAD training courses using Pro Engineer, IIS-Scientific Computing Rs 10,000/- (initial for Phase I). (Other consultants: Drs S Mukherjee, PVM Rao) (consultancy)
 18. Consultancy in conducting training courses using Pro / Engineer, IIS Scientific Computing – Phase II, Rs 125,000/- (Other consultants: Drs S Mukherjee, PVM Rao)
 19. Consultancy in conducting training courses using Pro / Engineer, IIS Scientific Computing – Phase IV, Rs 150,000/- (Other consultants: Drs S Mukherjee, PVM Rao)
 20. Consultancy in running CAD training courses (Ph III), IIS Scientific Computing, Rs 1.68 lacs, (PI: A Chawla, Other consultants: Dr S Mukherjee, Dr PVM Rao) (consultancy)
 21. CAD / CAM Courses using Pro Engineer, Hero Global Design Systems, Rs 6.57 lacs, (PI: Dr S Mukherjee, Dr A Chawla, Dr PVM Rao) (consultancy)
1. Technology Development for bone and tissue properties and development of human body FE model – Phase I, Japan Automobile Research Institute, Rs 14.49 lacs(consultancy), (Other consultants, Dr S Mukherjee, and Prof D Mohan).
 2. Development of methodology for modeling of airbags, Japan Automobile Research Institute, Rs 4.85 lacs, (Other investigators, Dr S Mukherjee, and Prof D Mohan).
 3. Development of instrumentation systems and related technology for condition monitoring of, DST, Rs 26 lacs (Total project cost: Rs 1.26 crores, other agencies involved: CSIO, BHEL, IIT Kanpur). (Co-PI: Dr S Mukherjee)
 4. Crash Simulation of the car – MC crash using Pamcrash (Ph – II), Japan Automobile Research Institute, US\$26400, (Other consultants, Dr S Mukherjee, and Prof D Mohan) (consultancy).
 5. Crash Simulation of the car – MC crash using Pamcrash (Ph – II), Japan Automobile Research Institute, US\$10000, (Other consultants, Dr S Mukherjee, and Prof D Mohan) (consultancy).
 6. Sample studies regarding car-mc simulation – II, Japan Automobile Research Institute, 162,227/-, (other consultants, Dr S Mukherjee, and Prof D Mohan) (consultancy).

7. CAD / CAM Courses using Pro Engineer, Hero Global Design Systems, Rs 5.25 lacs, started July, 2001 (expected duration 3 months), (PC: Dr S Mukherjee, Other consultants Dr A Chawla, Dr PVM Rao), (consultancy).

15. PROJECTS / CONSULTANCIES UNDERWAY:

1. Development of an automated Security System for vehicle entry - exit control consisting of vehicle authorization system and under carriage vehicle inspection system, Department of information Technology, R&D Division, Rs 162.5 lacs, (other consultants - Prof M Balakrishnan, Prof S Bannerjee, Prof DT Sahani, Dr S Mukherjee)
2. Safety modeling and epidemiological research, Volvo Research Foundation (Other consultants Prof D Mohan, Dr S Mukherjee, Dr P Mahajan)
3. MHRD, Rs 5 lacs, (Other investigators - Dr S Mukherjee, Dr PMV Subbarao)
4. Development of methodology for modeling of airbags for OOP study, Japan Automobile Research Institute, US\$ 30000 (Other investigators, Dr S Mukherjee, Prof D Mohan)
5. Technology Development for collecting Bone and Tissue properties and development of Human Body FE Model - Phase II, Japan Automobile Research Institute, US\$ 60000 (Other investigators, Dr S Mukherjee, Prof D Mohan)
6. Technological Evaluation of RTVs, Transport Department of Govt of Delhi, 2 lacs, (Other investigators - Dr S Mukherjee, Prof D Mohan)
7. Modernization of the Mechanisms Lab, MHRD, Rs 5.00 lacs (Other investigators - Dr S Mukherjee)
8. Rail Stress Calculations, RDSO, Lucknow, Rs 10.60 lacs, (Other consultants Dr S Mukherjee) (consultancy).]
9. Three Wheeler Crash worthiness Phase I, Bajaj Auto, Rs 5.00 lacs + US\$2000, October 2000, PI: D Mohan, Co-PI: A Chawla, S Mukherejee. (consultancy)

16. BTECH PROJECTS SUPERVISED:

Work Under progress:

1. Kumar Rajiv and Swaminathan TN, FE Based Crash Modelling of a three wheeler.
2. Lahoti Ujwal and Jain Gaurav, Impact simulations of auto parts.

Thesis Already Submitted:

1. Pundeer Anurag and Kumar Praveen, Motorbike – car crash modelling using Pamcrash, Btech (Mech Engg) Thesis, Department of Mechanical Engineering, IIT Delhi, 1999.
2. Wadhwa Aashish and Garg tarun, Feature Based Design System for shop floor scheduling, Btech (Mech Engg) Thesis, Department of Mechanical Engineering, IIT Delhi, 1999.
3. Singh Ravi and Srivastava Chitranshu, Finding equivalent beam elements for a box beam, Btech (Mech Engg) Thesis, Department of Mechanical Engineering, IIT Delhi, 2000.
4. Bose Diapn and Gupta Rahul, Finite Element Analysis of child restraint system in car crash simulations, Btech (Mech Engg) Thesis, Department of Mechanical Engineering, IIT Delhi, 2001.
5. Gupta Nitin Navish and Govil Rohit, Dynamics of rail-wheel interaction, Btech (Mech Engg) Thesis, Department of Mechanical Engineering, IIT Delhi, 2001.
6. Saini Parul Joy and Yadav Sumit, Modelling of helmets, Btech (Mech Engg) Thesis, Department of Mechanical Engineering, IIT Delhi, 1998.
7. Arora Vikram and Maurya Shyam Roop, Design of Plastic components, Btech (Mech Engg) Thesis, Department of Mechanical Engineering, IIT Delhi, 1998.
8. Sharma Vivek, Crash modeling of Bus Body Structure, Btech (Mech Engg) Thesis, Department of Mechanical Engineering, IIT Delhi, 1997.
9. Mehta Amit and Vishwanath Donti, Three Dimensional Crash modeling of Indian two wheelers using computer simulation, Btech (Mech Engg) Thesis, Department of Mechanical Engineering, IIT Delhi, 1997.
10. Bansal A and Vajpayee S, 3D crash modeling of an Indian bus using computer simulation techniques, Btech (Mech Engg) thesis, Department of Mechanical Engineering, IIT Delhi, 1996.
11. Ghosh S, Expert System to automate decision making in a manufacturing unit, Btech (Mech Engg) thesis, Department of Mechanical Engineering, IIT Delhi, 1996.
12. Singh S and Bawabhalla KS, Three Dimensional crash modeling of vehicles on Indian Roads, Btech (Mech Engg) thesis, Department of Mechanical Engineering, IIT Delhi 1995.

13. Jain V and Agarwal P, Development for Expert system for Design of watches, Btech (Mech Engg) thesis, Department of Mechanical Engineering, IIT Delhi, 1995.
14. Kapoor N and Singh D, Expert System Development for Fabric Design, Btech (Textile Engg) thesis, Department of Mechanical Engineering, IIT Delhi, 1994.
15. SK Mangla and Verma S, Knowledge Based Reasoning Model for Fault Diagnosis, Btech (Mech Engg) thesis, Department of Mechanical Engineering, IIT Delhi, 1994.
16. Bairwa GL, A Knowledge Based Approach to Mechanical Design, Btech (Comp Sc) thesis, Department of Computer Science and Engineering, IIT Delhi, 1994
17. Chandana AK and Sharma Sameer, Safety and related manufacture of a three wheeler scooter rickshaw, Btech (Mech Engg) thesis, Department of Mechanical Engineering, IIT Delhi 1994.

1. MSc / MTech PROJECTS SUPERVISED:

Work Under progress:

1. Babu Jadhav, Development of Human dummy models for crash simulation (MS(res)) (under progress)
2. Dileep Kr, Modeling of honey comb structures used in car-side impact tests, Mtech (Design of mech equipment) thesis, department of mechanical engineering, 2000 (under progress).
3. Shiv K Iyer, Modeling of MATD dummies for MC crash modeling, Mtech (Design of mech equipment) thesis, department of mechanical engineering, 2000. (under progress).
4. Sandeep, Optimization of helmet, Mtech (Design of mech equipment) thesis, department of mechanical engineering, 2000, (under progress).

Thesis already submitted:

5. S Vulli, Modeling of car floor panel for crash simulations, Mtech (Design of mech equipment) thesis, department of mechanical engineering, 2000.
6. Deepak Chougule, A study of leg impact implication on bumper design, Mtech (Design of mech equipment) thesis, department of mechanical engineering, 2000.
7. K Mani, FE based simulations of car-motor cycle frontal crashes – an initial study, Mtech (Design of mech equipment) thesis, department of mechanical engineering, 2000.

8. Mahesh Hamne, Numerical analysis of applicability of pultruded FRP profiles compared to aluminum profiles, Mtech (Production Engineering) thesis, department of mechanical engineering, 2001, (under the DAAD exchange program).
9. R Sreenivas, Dynamic analysis of misaligned rotor systems MS(Res) thesis, department of mechanical engineering, 2000.
10. Vijay Sridhar, CAD Modeller for Madymo - II, Advanced Level Course in Computer Science, Institute of electronic and Telecommunication Engineers, India, 2001.
11. Parab Milind, Modelling of car – motor cycle crashes using PAM CRASH, Mtech (Design of mech equipment) thesis, department of mechanical engineering, 2000.
12. Mane NH, Modelling of bullet penetration in helmet, Mtech (Design of mech equipment) thesis, department of mechanical engineering.
13. Ch Rajaiha, Design of an on-line expert system for condition monitoring of 220MW TG sets, MTech (Design of mech equipment) thesis, department of mechanical engineering, 1998.
14. Yatinder Saxena, CAD Modeller for Madymo - I, Advanced Level Course in Computer Science, Institute of electronic and Telecommunication Engineers, India, 1998.
15. Nagaraju B, Design of a test-rig used to study the effect of misalignment of the vibration of a rotor, MTech (Design of mech equipment) thesis, department of mechanical engineering, 1998.
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