

SHRAVAN KUMAR GOPAL

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EDUCATION

MS, Mechanical Engineering, University of Alabama, Birmingham (Summer 2009)

Research: Discontinuous Galerkin Methods (DGM)

GPA: 4.0/4.0

BE, Mechanical Engineering, University of Madras, India (2004)

GPA: 86.32/100.

GRADUATE COURSEWORK

Engineering Analysis, Computer Aided Engineering, Continuum Mechanics, Finite Element Methods II, Introduction to Finite Element Method, Advanced Fluid Mechanics I, Computer Aided Geometry Design, Introduction to Computational Fluid Dynamics, Advanced Computational Methods in Engineering, Advanced Computational Fluid Dynamics and Functional Analysis.

RESEARCH

Worked extensively on discontinuous Galerkin methods (DGM), DGM is somewhere between Finite Volume and Finite Element method and couples the advantages of both.

DGM has been extensively used in Computational Fluid Dynamics. Especially it has been used to solve hyperbolic equations. Currently it is also being developed for Elliptic and higher order equations by writing down these equations as a set of first order equations. My research focuses on developing a novel DGM technique to solve two dimensional structural dynamics equation. Currently my work deals with understanding the mathematical nature of DGM and to implement it for some simple 2D problems (special focus on Elliptic Equations). Numerical solver implemented in C++.

PROJECTS

- Solving Navier stroke equations around a cylinder using HYB3D (CFD Solver), MINICAD (unstructured mesh generator) and Field View (visualization).
- Analysis of modes of vibration of plates using ANSYS.
- Solution of one dimensional Shock tube problem using McCormack Scheme (Implemented in C++).
- Parameter Selection and Knot vector generation for Bezier/ B-Spline curves (Implemented in C++).
- Solver for two dimensional (Linear) structural dynamics equation (Implemented in C++).
- Developed Numerical Solvers and Matrix manipulators (C++).
- Study project on Open FOAM (open source CFD tool kit).

TECHNICAL SKILLS

Development Languages	C++, C, FORTRAN
Development Platforms	Windows, LINUX
Mathematics	MATLAB, MATH CAD
CAD	CATIA, PRO E
FEA/CFD	ANSYS, HYB3D (In house)
Meshing	Hyper Mesh, MINICAD (In house)
Post Processing	Tec Plot, Field View
Software	ADELE, Visual SourceSafe, Visual Studio
Others	MS Office

WORK EXPERIENCE

Research Assistant, University of Alabama at Birmingham

Fall 2006 Onwards

Software Engineer, Geometric Software Solutions (Pune, India)

November 29, 2004 – June 18, 2006.

- Worked in 3D PLM (A joint venture between Geometric Software and Dassault Systemes) Project involved enhancement of existing and developing new functionalities in the Electrical Modules of CATIA.
- Coding done in C++.
- Also involved with maintenance of functionalities developed.
- Unit Testing.
- Release Management.
- Compliance with client quality procedure.
- Involved in guiding fresh graduates in DS quality procedures.

Project Engineer, VA TECH WABAG (Madras, India)

June 02, 2004 – November 26, 2004.

Overall coordination of project related activities (Planning, Engineering, Procurement and Quality) and expediting.

AWARDS AND HONORS

- Awarded Graduate Research Assistantship for the year 2007-2009.
- Awarded Graduate Fellowship (via the GAFFP program) for the year 2006-2007.
- Received “Champion Award” from Geometric Software Solutions for wiping out backlogs and bringing the project (CATIA V5 HD3) back on track.
- University rank holder (9th) and Gold medalist.
- Foundation for Excellence (FFE) scholarship holder for six consecutive years (1998-2004).
- School first in X/XII grade national level CBSE examinations.

OTHER ACTIVITIES

- Contributed as a Tax Volunteer through the STEP/TCE program of IRS (2007, 2008).
- Was science secretary of school (1999-2000)
- Was a member of Road Safety Patrol (India, 1996-2000)

REFERENCES

Available on request