

## A Brief Curriculum Vitae

1. **Name** : Dr. DEBASHISH CHAKRAVARTY
2. **Designation** : Associate Professor
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### 4. Educational Qualifications:

Academic Degrees Held	Year of passing	University/ Institution	Specialization	Scholarship if any, held
Post Doctoral Fellowship	2003	FZJ, Germany	Collaborative & Distributive Virtual Reality, Computer Science Division under Applied Mathematics Center	German Government Scholarship
Ph.D.	2001	IIT, Kharagpur	Digital Image Processing and AI in Rock Mechanics	Institute Scholarship
M. Tech.	1995	IIT, Kharagpur	Mining Engg.,	GATE Scholarship
B.Tech.	1993	IIT, Kharagpur	Mining Engineering	NA

### 5. Professional Experience:

Organization	Designation	From	To	Nature of experience
PricewaterhouseCoopers Ltd	Consultant	July 1998	Aug 2000	Strategic and IT consulting
CSE, IIT, Kharagpur	Junior Project Officer	Sept 2000	April 2002	Research on PCTL and digital circuits
Forchungzentrum, Juelich, Germany	Guest Scientist and a postdoctoral fellow	April 2002	May 2003	Collaborative and Distributive Virtual Reality and Visualization
IIT, Kharagpur	Visiting Faculty	May 2003	Dec 2003	Teaching and Research
IIT, Kharagpur	Assistant Professor	Dec 2003	Oct 2011	Teaching, Research & Involvement in Student Activities
IIT Kharagpur	Associate Professor	Nov 2011	Till Date	Teaching, Research & Involvement in Student Activities

## **6. ACADEMIC PROJECTS WORKED / WORKING ON, IN TUNE WITH THE RESEARCH INTERESTS:**

1. Applied Geo-Imagery and Geo-Spatial Data Analysis:  
Rock Image Analysis and Classification, Fractal Analysis of Digital Images of Rock Surfaces, 3D Mapping of Mining Activities for Opencast Excavations
2. Numerical Modeling and Analysis:  
Continuum & Discrete Element Analysis of Earth Material, Rock Blast Fragmentation Analysis, Blast Vibration Monitoring, Slope stability design, analysis and monitoring.
3. Geomatics & Geoinformatics:  
Use of DGPS (Differential Global Positioning System) and InSAR (Interferometric Synthetic Aperture Radar Analysis for Ground Deformation Mapping, Wide-Area Monitoring, Prediction, Data Integration using Data Fusion Technique for Error Minimisation
4. Computer Visualisation & Virtual Reality:  
Worked on design and implementation of a Workbench for Collaborative and Distributive Virtual Reality

## **7. Computer Programs Developed under my supervision:**

1. Discrete Element Method for 2D particles with circular shapes, as a part of BTech and MTech Project Guidance under me for slope stability assessment and design
2. Use of advanced techniques for estimation of rock slopes: their design, stability analysis and monitoring.
3. Rock Fragment Image Analysis for Post-Blast Analysis, as a part of MS student guidance under me
4. 3D Image Generation from 2D Images of Mine Workings, under SRIC URA Scheme; as a part of student guidance for BTech project
5. The SIFT, RANSAC etc. algorithms have been coded for obtaining the 3D structural information from the geo-images collected over the open cast mines.

## **7. MEMBERS OF PROFESSIONAL and ACADEMIC BODIES:**

- Associate member of the Institution of Engineers (India) since 1996.
- Life Member of MGMI
- Member of IEEE IIT KGP Chapter
- I am member of the following mailing lists
  - Geo-mechanics mailing-list
  - AI-Geostatistics mailing-list
  - Morphology mailing-list
  - 3D-Graphics\_Group
  - RS-GIS Moderator
  - Advanced c graphics programming
  - Computer vision

## **8. AWARDS:**

- Received the Merit Certificate for one of my paper from IEI (India).
- I was awarded the Post-doctoral Fellowship award from the FZJ, Germany under the BAT II scheme of German Government
- I ranked 3rd in the graduation degree, in a batch of 30 students.
- I stood 1st in the whole batch of post-graduate scholars.
- I was awarded institute scholarship for my post-graduation and research studies.

## 9. SPONSORED RESEARCH AND CONSULTANCY PROJECTS INVESTIGATED:

No.	Agency	Title of Project	Period	Status	Funds (in Lakhs of RS)
<b>Sponsored R&amp;D Projects</b>					
1	ISRO	Algorithm development for PSInSAR for the ground profile change detection	2013-2015	Started	10.00
2	KCSTC, IITKGP ISRO	Use of InSAR for determination of the Ground Profile Changes in and around the mining areas	2011-2014	Continuing	32.00
3	KCSTC, IITKGP ISRO	Use of Hyperspectral Remote Sensing for Mineral Identification and Possible Mapping	2010-2014	Continuing	29.00
4.	MHRD	Develop Virtual Laboratory for Mine Ventilation Experiments	2010-2014	Continuing	56.00
5.	SHELL International and Exploration BV, The Netherlands	Integration of GPS and InSAR Data using Data Fusion Technique	2006-2009	Completed	100.00 (approx)
6.	CIL R&D	Technical Study on Stability Analysis of Old and Active OB Dumps of WCL for their Dimensional Optimization	2006-2009	Completed	359.6
7.	CIL R & D	Application of High Precision Satellite Imaging and DGPS Technology for On-Line, Wide-Area Subsidence Monitoring Study in Raniganj Area, Eastern Coalfields Limited.	2005-2008	Completed	242.4
8.	ISIRD	Design and Development of an Automatic and Intelligent System for Fragment Size Determination in a Blasted Muck	2004 – 2007	Completed	3.00
<b>Consultancy Projects &amp; Others</b>					
5.	Tata Steel Limited	Effect of heightening on the stability aspects of TDF at Sukinda Chromite Mine (TDFS)	2008	Continuing	2.5
6.	PIO Mine	Study of ground vibration for Gandhamadhan Sponge Industries	2008	Completed	2.6
7.	Envmin Ltd	Study of ground vibration for Balagunda Iron & Manganese Mines	2008	Completed	2.4
7.	EPL, Chennai	Statistical Determination of Aggregate Rock Properties	2003	Completed	4.7
9.	FZJ, Germany	Collaborative and Distributed VRE	2002-2003	Completed	30,000 Euros (approx)

## 10. TECHNICAL / INTERNAL REPORTS

- A Review of Information Visualization Techniques and Applications for Easy Availability of Information, in ZAM, FZJ, Juelich, Germany, June 2002.

## 11. BOOKS etc.

One book in the process of publication

## **12. LIST OF PUBLICATIONS:**

NATIONAL CONFERENCES / SYMPOSIA: 33 No.

INTERNATIONAL CONFERENCES / SYMPOSIA: 32 No.

JOURNALS: 46 No.

## **13. PhD Guidance**

Till date I have the following as the status of the PhD students under different schemes:

07 Completed, 2 submitted and 10 continuing (Jointly with other professors of the institute).