

GARGI CHAUDHURI

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EDUCATION

University of California, Santa Barbara September **2007 – 2011** (July)
PhD in Geography, GPA: 3.94

Dissertation: *'Impact of interaction between land use – transportation network and its change over time'*. (In preparation); Advisor: Dr. Keith C. Clarke

M.Sc in Geography (specialization: Cartography) **2005 – 2007**
Thesis: *'Transport Infrastructure of Kolkata and its Development'*, University of Calcutta, India

B.Sc (Honours in Geography with specialization in Cartography) **2002 – 2005**
(Minor in Economics and Political Science), Shri Shikshayatan College, University of Calcutta, India

RESEARCH EXPERIENCE

Oak Ridge National Laboratory (June – September 2010)

Graduate Student Intern, GIST group, Supervisor - Dr. Budhendra Bhaduri

I worked on designing a spatially explicit biofuel crop expansion model to study the direct and indirect impact of Energy Independence and Security Act (EISA) 2007 on land use change and identify ecological areas of US that are susceptible to respond to this change. My job responsibility was focused on first, reviewing the literature of land use land cover (LULC) change models, effect of policy on LULC, economic and statistical models of agricultural system, deforestation/afforestation model, land use change and biofuel, and also reviewing worldwide statistical and remote sensing products and agriculture and LULC databases that can be utilized so feed the model and secondly, to create the conceptual framework of the model under the guidance of my supervisor.

University of California, Santa Barbara

Research Assistant, Department of Geography

- **Impact of interaction between land use – transportation network and its change over time**; Supervisor – Dr.Keith Clarke

Funded by UC Transportation Center's Dissertation Research Fellowship, this project investigates the impact of policy on land use – transportation interaction and its change over time in the twin city of Gorizia at the Italo-Slovenian border. SLEUTH, a cellular automata based land use change model which runs on UNIX and written in C language, has been applied under multiple scenarios to study the effect of differencing policy in this politically vulnerable trans-border region of the European Union. In addition, graph theory measures and topological analysis of network programmed through Matlab, Network analysis softwares and Python scripts, have been applied to analyze the dynamics of transportation network. The model uses multi-temporal raster layers of Slope, land use, urban, exclusion, transportation, and hillshade as input images which were derived by processing satellite imageries and GIS data. Due to the unique location of the study area and requirement for the

multi-temporal dataset, the study has automatically addressed the issues of geospatial data fusion over time and space and from multiple sources with different attributes.

- **Offshore Minerals Management and Renewable Energy Program** (September 2009 – June 2010); Supervisor – Dr. Michael Goodchild.
Funding provided by Pacific OCS Region of the Minerals Management Service. The work involved handling, processing and addressing the issues of geographic data from the time of its collection as mere numbers to publicly available geospatial information for use in research. For this project, we used multiple database management softwares for pre-processing of the data, and ArcGIS to process data and create maps. I was also responsible for supervising the undergraduate interns working in this project, organize project meetings, present project updates and write reports, and work directly with MMS.
- **Southern California Association of Governments (SCAG) Activity Based Travel Demand Model Development Project** (June – August 2009); Supervisor – Dr. Kostas Goulias. Worked on areal interpolation of transportation data from multiple sources and at varying hierarchical levels (such as, Parcel layer, Block Administrative layer, Traffic Analysis Zone layer, and County layer) with multiple variables and misaligned boundaries. ArcGIS was used with a customized python script to solve the problem.
- **Instructional Development for GIScience course** (July – September 2008) – Supervisors: Dr. Keith Clarke, Dr. Martin Raubal and Dr. Michael Goodchild. Designed laboratory assignments for graduate level course on GIS research.
- **Master’s Project:** 'Physical and Cultural condition of Rampur sub-division with special emphasis on Rampur Town, Himachal Pradesh, India 2007'. Faculty Supervisor: Dr. Pratima Rohatgi, Reader, Geography Dept., University of Calcutta
- **Undergraduate Project:** 'Physico – Socio – Economic study in and around Pareng Tar Village' of C.D.Block Gorubathan in Darjiling district of West Bengal, India, 2004. Faculty Supervisors: Dr. Satarupa Dasgupta and Mrs. Ritubarna Pratihar, Geography Dept., Shri Shikshayatan College, University of Calcutta
- **GIS certificate course projects:**
Supervisor: Dr. Dipanwita Chattopadhyay, Webel GIS Academy, Kolkata, India
 - Occupational Structure of North Dinajpur in West Bengal, India , 2006;
 - Educational Structure of North – 24 Parganas in West Bengal, India , 2005;.

GRANTS AND AWARDS

- **UCSB Academic Senate Graduate Student Travel Grant 2011**
For traveling to Geocomputation 2011, London, UK (\$1030)
- **Jack and Laura Dangermond Travel Award 2011**
For traveling to AAG 2011, Seattle, WA, USA (\$914)
- **Jack and Laura Dangermond Travel Award 2010**
For traveling to AAG 2010, Washington DC, USA (\$900)
- **UCTC Dissertation Research Grant 2009 – 2010**

- University of California Transportation Center (\$20,000)
- **Jack and Laura Dangermond Travel Award 2009**
For traveling to EUGEO 2009, Bratislava, Slovakia (\$1,000)

TEACHING EXPERIENCE

University of California, Santa Barbara

Instructor, Department of Geography

- Geog 12: Maps and Spatial Reasoning Summer 2011

University of California, Santa Barbara

Teaching Assistant, Department of Geography

- Geog 128: Analytical and Computer Cartography Winter 2011
- Geog 210C: Statistical Methods in Geography Spring 2009
- Geog 288KC/195KC: GIS Research Winter 2009
- Geog 184: Cartographic Design and Geographic Visualization Fall 2008
- Geog 126: Maps in Science and Society Winter 2008
- Geog 12: Maps and Mapping Spring and Summer 2008, Fall 2007

PUBLICATIONS

Journal Publications:

1. Chaudhuri, G., and Clarke, K. C. (*in preparation*), Impact of policy on interaction between change in land use and transportation networks over time.
2. Chaudhuri, G., and Clarke, K. C., How does land use policy affect urban growth?: a case study on the Italo-Slovenian border, *submitted to Land Use Policy*
3. Chaudhuri, G. (2007), Sustainable Tourism in Mountains, *The Observer*, Student Geographical Association, University of Calcutta, Vol. 45, pp. 42 – 44

Conference Publications:

1. Chaudhuri, G., and Clarke, K. C. (2011), Temporal limitations of urban growth modelling, *Proceedings of Geocomputation 2011*, University College London, UK.
2. Chaudhuri, G., Bhaduri, B. L., Singh, N., and Clarke, K. C. (2011), Expanding Bioenergy and Land Use Change: A Spatially Explicit Modeling Approach, *Abstract Proceedings, 2011 AAG Annual Meeting*, April 12 – 16, Seattle, Washington, USA
3. Goodchild, M.F., Chaudhuri, G., Hakes, C., Mullaney, K., Royal, N., Mihatov, P., Chehayeb, Z. (2010), ‘Spatial Database for Off-shore Energy and Mineral Resources Infrastructure, Pacific West Coast Region’, *Spatial@UCSB.local10 conference*, University of California Santa Barbara, June 2010
4. Chaudhuri, G. (2010), ‘Urban Growth in a Trans-Border Region’, *Abstract Proceedings, 2010 AAG Annual Meeting*, April 14 – 18, Washington DC, Columbia, USA
5. Chaudhuri, G., and Clarke, K. C. (2009), ‘Impact of Urban Policy on Urban Growth’, *EUGEO 2009, Abstract Proceedings of Second International Congress on the Geography of Europe*, August 13 – 16, Bratislava, Slovakia

6. *Chaudhuri, G., and Clarke, K. C. (2009), 'Transportation as a Determinant of Land Use Change Over Time', Abstract Proceedings, 2009 AAG Annual Meeting, March 22 – 27, Las Vegas, Nevada, USA*
7. *Chaudhuri, G. (2008), 'Changing Mode of Transportation Infrastructure in Kolkata, India', 14th Annual UCTC Conference, University of California Santa Barbara, February 2008*
8. *Chaudhuri, G., Dhar, P., and Sarkar, R. (2007), 'Disaster Management in India', Proceedings of International Seminar on Poverty and Development in South Asia, January 11-13, 2007, Department of Geography, University of Calcutta, India*

SKILLS AND TECHNIQUES

- Geographic Information System: ArcGIS, GRASS GIS, GeoDa and other open source GIS and cartographic softwares, AutoCAD mapper, ENVI (for image processing).
- Programming: Matlab (Intermediate), Python (basic), IDL (basic), MPlus (basic), SPSS, LINGO (basic).
- Graphics, layout design –Dreamweaver, Flash, Photoshop, Illustrator, CorelDraw
- Courses taken in UCSB:
 - Analytical Methods in Geography I (Dave Siegel);
 - Analytical Methods in Geography - II, III (Phaedon Kyriakidis);
 - Transportation Modeling and Simulation (Kostas Goulias);
 - Travel Behavior Analysis (Kostas Goulias);
 - Seminar on Geographic Information Science (Mike Goodchild);
 - Optimization Methods for Geographic Problems (Rick Church, audited);
 - Complexity in Geography (Helen Couclelis).

SYNERGETIC ACTIVITIES

- Mentored under-graduate student intern (September – December 2010)
- Mentored under-graduate student researchers for MMS project (January – June 2010)
- Member of Women in Science and Engineering (WiSE), UCSB, 2008 - Present
- Member of Association of American Geographers, 2007 – Present
- Student Representative of the Regional Development and Planning Specialty group of Association of American Geographers, 2009 – 2010
- Member of Geography Outreach and Visibility committee, 2007 – 2009
- Member of students committee for Association of American Geographers, Geography Department, UCSB, 2007 – 2009
- Assistant General Secretary of Students' Geographical Association, University of Calcutta, 2006 – 2007
- Member of Students' Organization committee, Shri Shikshayatan College, 2002 – 2004