

**Ramachandramurthy Sivakumar (siva) M.S., M.S., GISP**

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**SUMMARY**

Over fifteen years of professional work experience in applying Geographic Information Systems theory, tools and techniques for spatial data management, data analysis, system development, and application development to derive solutions for environmental, transportation, and infrastructure management areas. Administer systems, network, databases, web servers, and application servers on windows and UNIX platforms.

**EDUCATIONAL QUALIFICATIONS**

**Master of Science in Geographic Information Systems (1997)**

Georgia Institute of Technology, Atlanta, GA

**Master of Science in Civil Engineering (1993)**

University of Mississippi, Oxford, MS

**Bachelor of Science in Civil Engineering (1989)**

University of Madras, Madras, India

**PROFESSIONAL EXPERIENCE**

**Research Engineer II (April 1997 – Present)**

Center for Geographic Information Systems  
Georgia Institute of Technology, Atlanta, GA

**SELECTED PROJECT PROFILE**

- Develop a new routing methodology to find the optimal walking path in the city of Atlanta based on user preferences.
- Storm water master plan for Georgia Tech campus.
- Feasibility study on black water reuse on Georgia Tech campus.
- Analyze water quality for harvested water from campus cistern infrastructure on campus.
- Develop and maintain a robust campus wide infrastructure GIS data base consisting of variety of thematic data layers by inventorying, capturing, attributing, and mapping campus specific data layers for Georgia Tech. The database is intended to assist campus administrators and decision makers to be used in many applications such as visualizing campus infrastructure, planning for infrastructure improvements, master planning, safety, accessibility, sustainability, storm water studies, tree inventory and management, campus wide eco studies, general campus asset finder, green space management, and parking asset management.
- Develop workflow, methodologies, data conversion ETL procedures, geodatabase design, implementation, and management for campus thematic mapping layers. Develop Rich Internet Applications based on ArcGIS server Flex, Silverlight, and HTML5 technologies targeting browser and mobile platforms for campus stakeholder consumption.
- Developing a GIS framework for Georgia Tech police department for analyzing, visualizing, and modeling of security incidents in and around campus clery reporting area.
- Developed a GIS based estimates for current and future green space and common use areas for campus wide LEED sustainable sites open space preservation credit.

- Developed a GIS based tree inventory and management system for the campus. The system is also used to quantify total eco benefits for the campus.
- Providing GIS support for developing a Storm water master plan for Basin A on Georgia Tech campus.
- Developing mobile routing applications for walking and wheelchairs using user defined criteria – a proposal to University transportation center.
- Co-authored an Enterprise GIS Implementation Plan for the City of Albany, Georgia.
- Developed an Intranet ArcIMS based GIS application for the City of Atlanta for data resource dissemination.
- Managed the production of second generation Color Infrared Digital Ortho Photo generation for the state of Georgia. The project is a 1.6 million-dollar collaborative effort by USGS and several Georgia State government agencies.
- Researched methodologies for producing second generation Color Digital Orthophoto Quarter Quadrangles (CIR DOQQ) for the state of Georgia.
- Developing a Digital Mapping Server using ArcIMS to support the National Guard Bureau CounterDrug, CD-GRASS system.
- Contributed to the development of Atlanta Region Job Access Transportation Plan sponsored by Atlanta Regional Commission. The project utilized GIS spatial analysis techniques to study the spatial mismatch between home location of low income and welfare recipients and firms likely to hire them.
- Contributed to a study by the Centers for Disease Control (CDC) to examine the possibilities of an intervention that would initiate a travel behavior change in Elementary school children in the Atlanta Metropolitan Area.
- Developed an interactive Internet based map server application for the Georgia High-Speed telecommunication Atlas. The atlas is a first comprehensive attempt to inventory the fiber infrastructure in the state of Georgia in cooperation with several telecommunications service providers.
- Developed an Internet GIS based interactive mapping application for Fulton County School System to support its school redistricting public participation.
- Established the Georgia node for the National Spatial Data Infrastructure, National Geospatial Data Clearinghouse. The node is based on the Z39.50 search and retrieval protocol. Users can perform fielded searches on indexed metadata records to retrieve relevant metadata and digital data. Implemented an Isite Information System for metadata search and retrieval.
- Implemented a list server for Clearinghouse users to exchange technical discussions on the GISCC subcommittee activities.
- Contributed to the USGS NSDI “Don’t Duck Metadata” grant for the Georgia GIS Data Clearinghouse. The project was an extension to the NSDI node implementation in the state of Georgia.
- Compiled FGDC compliant metadata for GIS data from various Georgia government agencies to archive and distribute using cross platform tools.
- Obtained high priority GIS data sets from state government agencies; performed QA/QC, formatted, standardized, documented for redistribution to government agencies over the Internet.
- Developed mapping applications for the Internet using ESRI MapObjects ActiveX control and automation objects with Visual Basic 6.0.

- Developed an ArcView based Internet Map Server applications for the Web. Internet users can interact with the map from their Java enabled browsers. Users can pan, zoom-in, zoom-out on the map, and also query for attribute records associated with the map layers. Developing several other ArcView based thematic map applications for the Internet.
- Developed statewide county level thematic data layers from Census Bureau's 1995 TIGER/Line files using Arc/Info 7.1.1. and custom AMLs.
- Provided user support for agencies in troubleshooting data use problems obtained from the Clearinghouse and performed custom data conversion services for various government GIS units.
- Provided training on FGDC standard and metadata collection methods for government agencies developing and maintaining spatial data.
- Developed a prototype MapObjects based Internet Mapping Application for the Georgia Policy Council for Children to map various characteristics.
- Provided technical support for developing GADOT Railroad Crossing Management System research project.
- Provided technical support in developing the Mid-America Earthquake Region's Essential Facilities Management GIS Database.
- Estimating societal impacts of earthquake damage for the Shelby County, TN area using a GIS model. Contributed to the development of an Arc/Info AML based user interfaces to simulate water pipeline damage scenarios and prioritize the repair of broken pipelines.

### **CURRENT PROFESSIONAL AFFILIATIONS**

- Technical Experts Committee, Strategic Technology Investment, Georgia Tech
- Member, Oversight Committee, GIS Certification Institute (GISCI)
- Member, Review Committee, GIS Certification Committee (GISCI)
- Member, Crisis Mappers Standby Task Force
- Member, GIS Corps
- Board Member, Georgia GIS Coordinating Committee
- Member, Urban and Regional Information Systems Association (URISA), Georgia Chapter

### **AWARDS AND RECOGNITION**

- Received the College of Architecture, Georgia Tech "Outstanding Service Award" – *Sep. 2012*
- Received the College of Architecture, Georgia Tech "Outstanding Research Service Award" – *March 1998*.
- As a team member of the GIS Data Clearinghouse, received the first annual "Award for Computing Excellence" (ACE) award sponsored by the state of Georgia and Information Technology Policy Council (ITPC) – *March 1998*.
- URISA "Exemplary Systems in Government." – 2000 (team member of the GIS Data Clearinghouse).
- ESRI Certified ArcGIS Instructor (2004-2006).

## **TECHNICAL PRESENTATIONS**

- “Walkability – Optimal walking path based on user preferences”, Healthy Places Research Group, Georgia Tech.
- “Stakeholder participation in Building an University GIS”, ESRI International Annual User Conference, 2012.
- “University Campus of the Future in the Year 2035”, ESRI International User Conference, July 2012. Co-author (Abstract submitted).
- “Changing Nature of Education and Learning Landscape”, Spatial Plexus 2012 Conference, 2012.
- “Production specification for the second generation CIR DOQQ’s for the state of Georgia”, Department of Community Affairs - *January 2000*.
- “Methodology for producing second generation CIR DOQQ’s for the state of Georgia”, GIS Coordinating Committee meeting - *December 1999*.
- “System and Network infrastructure requirements to support collaborative research”, Zoo Atlanta. The presentation focused on the network and system requirements needed to write collaborative research proposals by the center for GIS and Zoo Atlanta - *March 1999*.
- “Implementing a state GIS Data Clearinghouse”, Annual URISA conference, Charlotte, NC - *July 1998*.
- “Understanding the FGDC Metadata and tools for developing FGDC compliant metadata”, Regional ESRI user conference, Atlanta, GA - *May 1998*.
- Delivered a technical presentation as a panel member on the Clearinghouse activities, NSDI implementation, and the importance of metadata during the URISA ’98 conference at Charlotte.

## **PUBLICATIONS**

- “Walk Route: A new methodology to find the optimal walking route in the city of Atlanta”, Paper submitted for 13th International Conference on Computers in Urban Planning and Urban Management (CUPUM), 2012.
- “Enterprise Implementation Plan for City of Albany”, Georgia (Co-author, 2007)
- “National Guard Digital Mapping Server Portal: National GIS Integration and Mapping Support.” Co-author, The Sixth Annual International Crime Mapping Research Conference. *December 2002*.
- “Data Development, Availability, Dissemination, and Organizational Issues in building the Georgia Spatial Data Infrastructure.” Co-author, Annual Conference of Geospatial Information & Technology Association (GITA), South East Chapter. *August 2002*.
- “Digital Mapping Server Implementation for National Guard Counterdrug.” Co-author, ESRI International User Conference, *July 2002*.
- “Georgia High-Speed Telecommunications Atlas.” ESRI Telecom Summit, April 2001.
- “Using OrthoBASE to create second generation USGS CIR Digital Orthophoto Quarter Quadrangles for the state of Georgia.” Annual ERDAS User Conference, Washington, D.C. - *May 2000*.
- “Integrating Digital Orthophotos into Geographic Information Systems Data Framework to Support Planning.”- Annual Conference of the Association of Collegiate Schools of Planning (ACSP) in Atlanta, GA - *November 2000*.

- “Establishing the National Geospatial Data Clearinghouse Node in Georgia”, Georgia GIS News, Spring 1998.
- “Presenting GIS Data on the Internet.” Georgia GIS News, Spring 1998
- “Establishing the National Geospatial Data Clearinghouse Node in Georgia”, Final Technical Report to FGDC, January 1998.

### **COURSES TAUGHT**

- Introduction to GIS, CP6514, Course Offered through Graduate City and Regional Planning program, Georgia Tech.
- Professional Education - Developed and taught a specialized continuing education course on “Introductory Course in ArcGIS” to GIS practitioners and beginners.
- Professional Education - Developed and taught a specialized continuing education course on “Deploying Internet Applications on the Internet Using ArcIMS” to GIS practitioners