

## NIVEDITA SAIRAM

Section 5.4, GFZ, Potsdam

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### PROFILE

- Strong background in Spatial data analytics, Databases, Programming and Datamining.
- PhD Researcher (2016-2019), Section Hydrology, German Center for Geosciences (GFZ), Potsdam, Germany
- Marie Curie Early Stage Researcher (ESR) working on developing Flood Loss Estimation Models (FLEMOs) for Germany.

### ACADEMIC RECORD

**M.S. Geomatics Engineering**, Florida Atlantic University (Jan 2015 - May 2016) **CGPA:** 3.9/4

- *Data Analysis, Statistics and Visualization (GIS datasets), Terrestrial Laser Scanning, Data Acquisition and Processing using Mobile Mapping Sensors, Object Oriented Programming.*

**Thesis** - Development of a Mobile Mapping System for Road Corridor Mapping

**B.E. Geo Informatics**, College of Engineering Guindy, Anna University (2010 - 2014) **CGPA:** 8.7/10

- *Physics for Geomatics, Concepts in GIS for Natural Resources, GIS Database Programming, Theory/Hands-on in ERDAS, ENVI and ArcGIS.*

**Thesis** - Analytics Portal for Restaurants using GIS for the city of Chennai in India - 2014

### SKILLS

<b>Programming Languages</b>	: Java, Magik, Shell scripts, PHP, Javascript, Python
<b>Database Systems</b>	: MySQL, PostgreSQL - PostGIS [GIS extension]
<b>Operating System</b>	: Windows, Ubuntu/LINUX; Release Management - SVN (Subversion)
<b>Software</b>	: ArcGIS, QGIS, R, MATLAB; SmallWorld, FME, Leica CYCLONE

### PUBLICATIONS

Sairam, Nivedita, Sudhagar Nagarajan, and Scott Ornitz. "Development of Mobile Mapping System for 3D Road Asset Inventory." *Sensors* 16.3 (2016): 367.

Nagarajan Sudhagar, Antoniou Constantinos, Sairam Nivedita. "Integration of Images and Laser Scanning Data for Automated 3D Road Feature Extraction." *Surveying and Land Information Science*.

### CONFERENCES

- Sairam Nivedita, Nagarajan Sudhagar, 'Improving the Efficiency of Handling High Density LIDAR Point Clouds in GIS Platforms - a conceptual framework.' *South Florida GIS Expo*, West Palm Beach, Florida, 2015.
- Sairam Nivedita, Nagarajan Sudhagar, 'Improving the Efficiency of Handling High Density LIDAR Point Clouds in GIS Platforms - implementation.' *ASPRS-IGTF*, Fort Worth, Texas, 2016.

The Framework is built using concepts of **Data Warehousing** considering LiDAR datasets as **Slowly Changing Dimension [SCD]**. Implementation of Master and fact table relationships.

- **Sairam Nivedita**, Nagarajan Sudhagar, ‘**Automatic Extraction of Road Infrastructure From Multi-Sensor Data**’ *ASPRS - IGTF*, Tampa, Florida, 2015.

## **SELECTED PROJECTS** (Spatial Data Analytics using R, Matlab, Python and ArcGIS)

### **Analysis of Spatio-temporal Dynamics of NYC Taxi Data - 2016**

Prediction of demand for taxi, duration of travel and ride fare at any given spatial location and time window based on pick-up drop points and time of the day (historical data). *Microsoft Azure ML* with **Numpy, Scipy and Pandas** libraries.

### **Determining Optimal Sites for Park and Ride Facility for Palm Beach County - 2015**

Socio-economic analysis with spatial patterns of land use, traffic flow and travel time to ensure maximum usage of park and ride lots.

## **EXPERIENCE**

1. Staff Developer, **Red Planet Consulting, Chennai** Jun-Dec ‘14
  - Worked on the Data schematics and Data Conversion to SW with the help of FME (Feature Manipulation Engine) in the development of a SmallWorld system for NPCL (Noida Power Company Ltd - India.).
  - **Technology Stack** - ArcGIS, QGIS, Smallworld (Electric Office)- Magik, FME, Oracle Spatial, SQL
2. Student intern, **Electronics and IT Department, Government of Haryana** Jun-Jul’13  
Project-**Integrated Village Information System (IVIS)**
  - Developed alternate methodologies for survey - Using concepts of **Geocoding**.
  - **Technology Stack** - Ubuntu/Linux platform, Shell Programming, PHP, Javascript, SVN, QGIS.
3. Student intern, **National Informatics Center (NIC), Chennai** May-Jun ‘12  
Project-**100 Days’ National Rural Employment Guarantee Scheme**
  - Constructed data models and built database design, data quality procedures using PostGIS topological functions. Developed web based GIS modules for Port trust, Chennai.
  - **Technology Stack** - Map Server - PHP Mapscript, Geo Server, PostgreSQL-PostGIS.

## **EXTRA CURRICULAR ACTIVITIES**

- Served as a Part-time **teacher for Cambridge - AS level Geography** at Akshar Arbol International School, Chennai, India (2013-2014).
- Organiser - **NoSQL, OSGeo** (Opensource Geospatial) workshops in collaboration with **Cognizant’s Geospatial and Big Data teams** - Kurukshetra 2013.
- English Elocution, Extempore, Debate, Classical Dance.
- Active volunteer in University **Community Service Scheme** (National Service Scheme)