DHANALAKSHMI. S

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OBJECTIVE:

In search for an apposite place which would aid me elevate my insight and competency for the potent proficiency in my lifework.

EDUCATION QUALIFICATION:

Name of the Examination Passed	Year of Passing	% of marks	Name of the Board/ University	Subjects Taken	Division	Subject of specialization
10th	2006	78%	Ideal MHSS	Mathematics, General science, Social studies	1st	-
12th	2008	77%	Ideal MHSS	Mathematics and Computer science	1st	Computer science
B. Tech	2012	80%	Bharathidasan University	Geo-technology and Geo-informatics	D+	Geology and Remote sensing
M. Tech	2014	82%	Bharathidasan University	Geo-technology and Geo-informatics	D+	Geology and Remote sensing

PROJECTS UNDERWENT:

Project title (Current Project):

"Coastal Process and Shoreline Mapping (CPSM)"

Description:

Senior Research fellow in project Coastal process and Shoreline mapping at Integrated Coastal and Marine area management – NIOT, Tamil Nadu. The actually progress done was, maintaining entire database of Southern Indian database under project of **Coastal Process and Shoreline Mapping (CPSM)**.GCP collection, Shoreline tracking using GPS, Rectification of spatial and field data, Quality check of entire data sets, Base map preparation, Shoreline extraction of both manual and software based and database management. Using Arc GIS, Shoreline change analysis done for entire Southern coast of India. Sea level rise analysis and Shoreline response with Sea level rise for Southern Tamil nadu coast using geo-informatics software's – Arc GIS, ERDAS, Surfer, and ENVI.

Field experience: Tracking Shoreline along Chennai coast.

Project Title:

"BRNS-COMAP"

Description:

Skilled Personnel, under project **BRNS-COMAP** at Center for Remote Sensing-Bharathidasan University**.** The work undertaken was digitizing, editing, and compiling various thematic maps for entire Andhra Pradesh State of Indian using ARC GIS, ERDAS, ENVI, SURFER software's.

M.Tech Project:

Project Title:

"Estimation of Shoreline Changes along Cuddalore Coast- India, using Statistical and Geo-matics Techniques"

Under the Guidance of:

- ***External Guide:*** **Prof. Dr. R.S. Kankara** (Scientist-F and Group Head)-ICMAM, atIntegrated coastal and Marine area management (ICMAM)-NIOT, Chennai.
- ***Internal Guide:*** **Mr.A. Muthamilselvan,** Assistant Professor, Centre for RemoteSensing- Bharathidasan University.

Description:

The main **objective** is to Estimate the shoreline changes (erosion and accretion) along Cuddalore coast. The **Parameters** like Using ENVI software, the ***image rectification and image processing*** like Band Ratio, Grey-Level Thresholding and Edge Enhancement are made. Exact land-water boundary was obtained by using a nonlinear edge-enhancement technique with Sobel operator (3×3 kernal matrix) on the band rationed image. The digitations of shoreline line of respective year are integrated with extracted shoreline for Quality assessment.

RUGGIERO et al. (2003) and MOORE et al. (2006) developed a technique for estimating the proxy datum bias based on estimates of the total water level (TWL) on beaches. The ***Wave Run-up*** (summation of Wave setup and Swash zone) are calculated with respect to study area. The bias calculation are obtained from calculated Wave run-up and Mean high water (MHW) values using Ruggiero method and which is used as Uncertainty value in ***DSAS (Digital Shoreline Analysis System)*** for estimation of rate of erosion and accretion, by using End Point Rate (EPR) as Short term analysis, Weighted Linear Regression (WLR) as Long term analysis and Net Shoreline Movement (NSM) methods.

B.Tech Major Project:

Project Title:

"Storm Surge Prediction & Vulnerability Modeling–Cuddalore to Pondicherry Coast"

Under the Guidance of:

Dr.J.Saravannavel, Assistant professor, Centre for Remote Sensing- Bharathidasan University, Trichy.

Description:

The main objectives of the project are to highlight the current activity in surge modeling. Wave height modeling is adopted for increase in the storm surge height from which the inundation distance is calculated. Since it is Empirical approach and to validate the result with engineering derived model are to be used. Comparing this towards the discharge rate over terrain height would give a detailed knowledge about the intensity of cyclone over the terrain. . Hence the resultant gives a brief admittance to prevent from the future disaster aimed in the coast.

Parameters used for Storm surge Modeling and Coastal Vulnerability Mapping are Winds Speed(Pressure Gradient, Rossby Waves), Geostrophic modeling, Assessment through Sea Surface Modeling (Stadium Effect, Eye-like feature), Wave Height (Proportional, Wind Stress, Inverse Proportional), Assessment through Land Modeling, Manning Equation, Calculation Of Hydraulic Radius, Average Velocity, Discharge Rate and Vulnerable mapping.

B.Tech Mini Project:

Project Title:
"Assessment of Future Sea Level Rise and Its Impact over Coastal Geo-System using Geomatics Technology – Pondicherry Coastal Sector."

Under the Guidance of:

Dr.J. Saravannavel, Assistant professor, Centre for Remote Sensing (CERS) Bharathidasan University, Trichy.

Description:

Current Sea Level Rise potentially impacts human populations and the wider natural environment. Along Pondicherry to Chidambaram region of eastern Tamil Nadu is barely affected often by many coastal disasters. An attempt has been made to demarcate the future **SLR** in this region and its impact over the on shore region, that would get affected, by using **Bruun Rule** (proposed by "BRUUN" in 1962)- shoreline retreat to an increase in local sea level. Remote sensing techniques (GIS) have been used for prediction of Future sea level rise and inundation of that region.

AREA OF DEXTERITY

SOFTWARE:

- ArcGIS 9.3.1, 10, 10.3
- ENVI 4.7,5.1
- Suffer 9.0
- ERDAS
- Global Mapper

Others: MS Office, CS Photoshop.

Platforms: Windows Xp/7/8/8.1/10

COMPUTER TECHNICAL SKILLS

GEOTECHNICAL AND GEOLOGICAL DATA COLLECTION

- Planning and coordination of geological and geotechnical data collection according to set standards and procedures.
- Analyzing, interpreting, digitizing of geotechnical and geological data from core logging Scan line Mapping.
- Geotechnical data collection and analysis using ArcGIS, ERDAS, Suffer and ENVI software.

DATA MANAGEMENT

- Quality check, Managing and manipulation of geotechnical and geological data.
- Validating and capturing geotechnical and geological mapping data efficiently and accurately to ensure quality at entry point.

STRUCTURAL MODELLING AND ANALYSIS

- Performing geotechnical analysis and structural analysis – fold(strike and dip), fault
- Shoreline change analysis using ARC GIS
- Storm Surge modeling, Sea level inundation mapping, Vulnerability mapping, using ARC GIS.
- Defining geotechnical and hydro-geological domains (areas of similar characteristics)
- Identifying potential failure modes and addressing them accordingly.

SOFT SKILLS:

- Experience capturing, converting, creating, editing and maintaining digital information in a GIS environment
- Abilities to create a variety of digital and geographical products including thematic maps, data tables, databases and associated descriptive statistics
- Proficient in GIS analytical techniques through current and developing technologies and software
- Detail-oriented and versatile, a self-motivated learner who looks for innovative ways to solve problems and create efficiencies
- Exhibits exceptional technical data skills

- Working knowledge of ESRI (ArcGIS) software products
- Working knowledge of Microsoft Office software (Access, Excel, Word, PowerPoint)
- Effective time management skills

EXPERIENCE:

- Since Jan 2019 - present, working as **Project Scientist – B** in National Center for Coastal research (NCCR), NIOT campus, Chennai, Tamil Nadu, India.

    - Duties and Responsibility: Shoreline Change Analysis for entire Indian Coast using Remote sensing application under Project Coastal process and Shoreline Management (CP&SM). Geographical Information System (GIS) application in data collection, rectification, digitations, Quality Check for Satellite data and manual field data. Also research along Impact of SLR with response to Shoreline Changes. Field Experience - tracking of shoreline for entire Chennai coast with GPS. Report writing with respective results and publications with R&D.

- Worked as **Senior Research fellow (SRF**) since Jan 2015 till July 2018 at Integrated Coastal and Marine Area Management - Project Directorate (ICMAM-PD)-NIOT, Chennai, Tamil Nadu, India.

    - Responsibility: Maintaining database under Coastal process and shoreline mapping project, Rectification, Quality check of satellite data, Sea level rise analysis, Shoreline analysis, and Shoreline response with Sea level rise using geo-informatics. Field experience: tracking Shoreline along Chennai coast,

- Since 01/2014 – 05/2014 **Project student** in integrated Coastal and Marine Area Management - Project Directorate (ICMAM-PD)-National institute of ocean technology (NIOT), Chennai.

- 5 months as **Assistant Technician** in Center for Remote Sensing**.**

FIELD VISITS:

- Besant Nagar Beach, Shoreline tracking for Shoreline change assessment.
- ***Area*:** Parts of Salem, Kanjamalai, Yercaud, Ramakrishna and various Mines (Tamil Nadu, India). ***Duration*:** 5 days.
- ***Area*:** Parts of Ariyalur (Tamil Nadu, India). ***Duration*:** 1 day.

Training Program:

- Attended NRSC (ISRO) ***Bhuvan workshop*** at Bangalore University, Karnataka, India.
- Training in ***Surveying*** at PG & Research Department of Geology, National College, Trichy- (Tamil Nadu, India).
- ***Indian Ocean sea level Science*** workshop at CSIR- National Institute of Oceanography (NIO), Goa.
- Winter School on **"*Operational Oceanography: Indian Ocean Circulation and Sea Level Variation*"** at Indian National Centre for Ocean Information Services (INCOIS), Hyderabad.

AWARDS/ACHIVEMENTS:

National/International Conference & Paper Presentation

- ***Trichy Cretaceous*** in ***AGE'11*** national level technical program at Anna University.
- ***Geomatics in Hard Rock Aquifer System*** in ***Geo Horizon*** national level technical program at Anna University.
- ***Storm surge prediction & vulnerability modeling – Cuddalore to Pondicherry Coast*** in 8th Int. Cong. Climate Change, Territorial Classification & Socio Economic Crisis at Bharathidasan University. ***"Assessment on Sea level rise impact on Chennai coast using geospatial techniques***" *in* 'Indian Ocean Sea Level Science' workshop held in CSIR-NIO, Goa during 19-20 October, 2015.

PUBLICATIONS:

- ***"Quantitative analysis of temporal variations on shoreline change pattern along***

Ganjam district, Odisha, east coast of India" Vipin Joseph Markose *, B. Rajan, R. S. Kankara, S. ChenthamilSelvan, S. Dhanalakshmi at *Environmental Earth Sciences.* *DOI: 10.1007/s12665-016-5723-1*

- ***"Impact assessment of sea level rise over coastal landforms: a case study of Cuddalore coast, south-east coast of India"-*** Dhanalakshmi Silamban*, R. S. Kankara, S. Chenthamil Selvan at *Environmental Earth Sciences*. *DOI: 10.1007/s12665-019-8463-1*

- **"Assessment On Shoreline Retreat In Response To Sea Level Rise – Chennai Coast"-** Dhanalakshmi Silamban*, R. S. Kankara- *Special Issue #89 of the Journal of Coastal Research.*

RESEARCH INTERESTS:

- PHYSICAL OCEANOGRAPHY (Sea Level Rise, Cyclone, Shoreline Change assessment, Coastal Vulnerability, Climate change)
- Coastal management
- 3D modeling using Remote Sensing tools.

PERSONAL DETAIL:

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Phone:	8015993351
Mail:	dhanageo13@gmail.com dhanalakshmi@nccr.gov.in
Date/place of birth:	13th April/Chennai
Nationality:	Indian
Gender	Female
Languages	Tamil, English

DECLARATION:

Hereby, I declare that all the details furnished above are true and correct to the best of my Knowledge.

S.Dhanalakshmi