Dean , Innovations and Student Projects

A) Personal Details

Name**: Dr. Ranga Rao Velamala**

Date of Birth**: 1st January 1965**

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ORCID ID**: https://orcid.org/0000-0002-6171-2293**

Scopus ID**: https://www.scopus.com/authid/detail.uri?authorId=57208774941**

Google Scholar**: https://scholar.google.co.in/citations?user=vB9dEXgAAAAJ&hl=en**

Citations**: 123 ,h-index: 5** (as of January,2025)

Research Gate**: https://www.researchgate.net/profile/Ranga-Rao-Velamala**

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Address: Current Address: Oakridge, 3j, 'B-block', Omcon reign project, besides GVP medical college, Marikiavalasa, Madhurawada, Visakhapatnam, Andhra Pradesh, pin - 530048

B) Educational Qualifications

Ph.D. in Statistics, Andhra University, 1994, M.Sc. in Statistics, Andhra University, 1990, M.Ed., Annamalai University, 1995,Post Graduate Diploma in Computer Science, University of Hyderabad, 1996, M.Sc. in Information Technology, Karnataka State Open University, 2008, M.Tech in Information Technology, Karnataka State Open University, 2011.

C) Areas of Specialization

Database Systems: Design, development, and management of relational databases using Oracle, MS-SQL Server, MySQL, PostgreSQL (including PostGIS for spatial data), and reporting with MySQL Report Builder.

Data Analysis: Expertise in statistical and spatial data analysis using Python, R, and SPSS (Statistical Package for the Social Sciences).

Remote Sensing and Geographical Information Systems (GIS): Proficient in GIS software (ArcMap, ArcPro, QGIS), SAGA, Digital Soil Mapping for spatial data management and analysis, and remote sensing applications and WebGIS (GeoServer, Leaflet, OpenLayers), Microsoft, Power BI and Tableau

Website Development: Skilled in web technologies, including HTML, CSS, JavaScript, VBScript, and .NET technologies.

E-Governance & M-Governance: Experience in implementing e-Government and m-Government systems to enhance public service delivery.

D) Models Developed for Soil Health Management Project (Government of India)

PySNM: An Open-Source Python Package for Automated Spatial Interpolation and Soil Nutrient Mapping for Sustainable Agriculture (2024)

SFM_MB Toolbox: A new ArcGIS toolbox for creating spatial distribution maps of soil fertility using Model Builder in ArcMap (2022)

SFMToolbox: An ArcGIS Python toolbox for the automatic production of soil fertility maps (2020)

E) Work Experience

I worked over 32 years of experience in the public sector, with specialized expertise in Database Systems Design, Development, and Management, Data Analysis, Geographical Information Systems (GIS), WebGIS,

Data Visualization using open-source technologies such as R and Python, Website Design and Development, as well as E-Governance and M-Governance. I am actively seeking opportunities to apply my extensive knowledge and skills in developing innovative technological solutions that enhance decision-making processes

(F) Positions Held (Recent to the past):

Dean , Innovations and Student Projects (April 15th , 20225 -)
Visakha Institute of Engineering & Technology, Visakhapatnam
Mentoring students on innovation and entrepreneurship projects, promoting industry-academia collaboration through joint activities, and organizing workshops and seminars, while contributing to research and consultancy with faculty members

Guest Faculty:
Currently working as a Guest Faculty in the Geoengineering Department at Andhra University, Visakhapatnam, Andhra Pradesh, since February 2025

Professor of Practice:
Sri Sivani College of Engineering, Srikakulam. Andhra Pradesh
From : January 6th   - April 14th , 2025
Worked as a Professor of Practice, teaching courses and mentoring students in innovation and entrepreneurship projects. Strengthened industry-academia collaboration through joint initiatives. Organized workshops and seminars, contributing to research and consultancy with faculty members."

Senior System Analyst (Group-'A' Gazetted), Level-12
Soil and Land Use Survey of India, Ministry of Agriculture and Farmers Welfare, Government of India
From: October 2010 – December 2024
Developed and maintained databases, software solutions, and GIS infrastructure for soil and land use studies. Supervised staff and ensured the maintenance of related equipment.
Key Achievements: Developed the SLUSI website, databases for surveys, and web-based applications using .NET, MS-SQL Server, ArcGIS, and Python, significantly reducing costs. Created the web-based Micro-Watershed Atlas of India and designed a database-driven compendium for Soil and Land Resource Data. Managed the GIS Lab and developed models for creating soil fertility maps under the Soil Health Project of India. Experienced in using GeoServer to visualize and integrate soil health data and soil surveys. Proficient in serving maps via WMS, WFS, and WCS, and using Leaflet and OpenLayers for web-based data visualization.

System Analyst / Programmer (Group-'A' Gazetted)
Department of Information Technology, Government of N.C.T. of Delhi
From: December 2005 – October 2010
Designed and developed websites, organized training programs, and supervised staff.
Key Achievements: Contributed to the security audit of over 100 government websites. Participated in the 'Secured Communication Network through TETRA' project and worked on the Delhi State Wide Area Network (DSWAN). Conducted IT staff training and prepared RFPs and tenders.

System Analyst / Programmer (Group-'A' Gazetted)
Indira Gandhi Institute of Technology (Renamed in 2012 as Indira Gandhi Delhi Technical University for Women), Delhi
From: April 2002 – November 2005
Developed and maintained the institute's website, managed network infrastructure, and provided IT training.
Key Achievements: Served as Head of the Computer Science Department. Established the campus-wide network and conducted DBMS Lab classes. Provided IT training to students and contributed to the overall IT infrastructure development.

Assistant Programmer (Group-'B' Gazetted)
Directorate of Economics & Statistics, Government of N.C.T. of Delhi
From: March 2000 – April 2002

Processed large volumes of data for the National Sample Survey using FoxPro.
Key Achievements: Streamlined data processing and improved data accuracy for national surveys.

Assistant Section Officer
Chief Minister's Office, Government of Andhra Pradesh, Hyderabad
From: September 1995 – March 2000
Managed databases for the Chief Minister's File and Grievances Monitoring System using Oracle and FoxBase.
Key Achievements: The system significantly improved response times and operational efficiency.

Assistant Statistical Officer
Directorate of Economics & Statistics, Government of Andhra Pradesh, Hyderabad
From: November 1992 – September 1995
Developed software for processing data related to the Census and surveys using COBOL and FoxBase.
Key Achievements: Developed software tools that enhanced the processing of large-scale census and survey data.

(G) Delivered Lecture

Delivered a lecture on the topic, "The Role of Statistics in Data Science," at the Geo-Engineering Department, Andhra University, on National Science Day, 28th February 2025**.**

(F) List of Publications: (Journals/Book-review/Conference Papers)

Journal Publication

1) Velamala, R. R., & Pant, P. K. (2025). Evaluating spatial interpolation methods and fuzzy c-means clustering for effective management zone delineation: a case study of soil health management in India, (accepted on 30-01-2025), Journal of Environmental Informatics Letters**. (Scopus)**

2) Velamala, R. R., & Pant, P. K. (2024). Modeling the spatial variability of soil nutrients: A case from the Soil Health Card Project, India. International Journal of Environment and Geoinformatics, Volume: 11 Issue: 3, pp 90 – 105. https://doi.org/10.30897/ijegeo.1465671

3) Velamala, R. R., Pant, P. K., & Gahlod, N. S. S. (2024). Sediment yield index (SYI) method for ranking of watersheds for soil and water conservation - A discussion. Journal of Soil and Water Conservation 22(4): 340-352, October-December 2023,ISSN: 0022-457X (Print); 2455-7145; https://doi.org/10.5958/2455-7145.2023.00044.9 *(NASS*)

4) Velamala, R.R., Pant, P.K. SFM_MB Toolbox: a new ArcGIS toolbox for building spatial distribution maps of soil fertility using model builder in ArcMap of ArcGIS, a case study. *Arab J Geosci* **17**, 46 (2024). https://doi.org/10.1007/s12517-023-11843-x **(Springer)**

5) Velamala, R. R., & Pant, P. K. (2023). SFMToolbox: an ArcGIS Python Toolbox for Automatic Production of Maps of Soil Fertility. Geomatics and Environmental Engineering, 17(2), 105–145. https://doi.org/10.7494/geom.2023.17.2.105 **(*Scopus)*

6) Velamala, R. R. (2017). A manpower model when complete length of service follows mixed right truncated exponential distribution. Bulletin of Mathematics and Statistics Research, Vol.5. Issue.4, Available at http://www.bomsr.com/5.4.17/56-63%20V.%20RANGA%20RAO.pdf

7) Rao, V. R. (2017). Improving Government to Employee (G2E) Services through Mobile Technology – A Survey. International Journal of Computer Applications (0975 – 8887), 33-45. ,https://doi.org/10.5120/ijca2017914472

8) Gahlod, N., Rao, V. R., Arya, V., et al. (2016). Development of micro-watershed atlas of Haryana state-a citizen centric perspective. *International Journal of Geomatics and Geosciences, 7*, 211–224.

9) Velamala, R. R. (2016). A manpower model when complete length of service follows right truncated exponential distribution. Vol.4.Issue.3.,Bulletin of Mathematics and Statistics Research, Available at http://bomsr.com/4.3.16/17-24%20V.%20RANGA%20RAO.pdf

10) Velamala, R. R. (2016). Government web application security: Issues and challenges – A case of India. International Journal of Computer Applications Technology and Research, Volume 168- No.6. https://doi.org/10.7753/ijcatr0510.1001

11) Rao, V. R. (2015). Citizen Relationship and Grievance Management System (CiR&GMS) through Multi-Channel Access for e-Government Services: A Case from India. *International Journal of E-*

Services and Mobile Applications (IJESMA), *7*(2), 43-67 , https://doi.org/10.4018/ijesma.2015040103 *(Scopus)*

12) V. R. Rao(2014), "A Framework for e-Government Data Mining Applications (eGDMA) for Effective Citizen Services-An Indian Perspective," International Journal of Computer Science and Information Technology Research vol. 2, no. 4, pp. 209–225, 2014.ISSN 2348-120X (online), ISSN 2348-1196 (print),Research Publish Journals

13) Velamala, R. R. (2013). A framework for unified digital government: A case of India. Journal of E-Governance, vol. 36, no. 1, pp. 35-55,. https://doi.org/10.3233/GOV-120329 *(IOS Press)*

14) V.R. Rao (2011). Collaborative Government to Employee (G2E): Issues and Challenges to E-Government ,Journal of E-Governance, 34 (4) (2011), pp. 214-229 :
DOI: https://doi.org/**10.3233/GOV-2011-0279** *(IOS Press)*

G)Book Chapters

1. Rao, V. R. (2021). **Digitization and mapping of soil information - Issues and challenges**. In *Sustainable intensification in Andhra Pradesh* (pp. 332). LAP Lambert Academic Publishing. ISBN-13: 978-620-3-84001-8; ISBN-10: 6203840017; EAN: 9786203840018.
2. Rao, V. R. (2018). Public services through multi-channel issues and challenges: A case from India. In M. Khosrow-Pour (Ed.), *Optimizing current practices in e-services and mobile applications* (pp. 273-300). IGI Global Scientific Publishing. https://doi.org/10.4018/978-1-5225-5026-6.ch014.
3. Tripathi, R. P., Rao, V. R., & Gupta, M. P. (2012). **Interoperability in e-government: Select aspects of personal information integration**. In M. A. Shareef, N. Archer, & S. Dutta (Eds.), *E-Government service maturity and development: Cultural, organizational, and technological perspectives* (pp. 78-93). IGI Global. https://doi.org/10.4018/978-1-60960-848-4.**(Scopus**)
4. Velamala, R. R. (2012). **Interoperability in e-government: Select aspects of personal information integration**. In *E-Government service maturity and development* (pp. 273-300). **IGI Global.** https://doi.org/10.4018/978-1-60960-848-4.

H) Conference Papers

1. Understanding Common and Specific applications of E-Government: A Case from India" (Year-2012). Presented a paper on "A case study on Collaborative G2E services in India" and published at the 8th International Conference on E-governance, 17–18th September 2011, at Nirma Institute of Management, Ahmedabad (Year-2011)
2. Presented a paper on "Public Safety: Secured Emergency Integrated Communications Network – Issues and Challenges for M-Government" at the 7th International Conference on E-Governance, 22-24 April, 2010, Indian Institute of Management (IIM), Bangalore, Abstract (Paper-ID:57) (Year-2010)
3. Presented a paper on "Key Issues of Personal Information Integration in E-Government" and published at the 6th International Conference on E-governance, 18–20 December 2008, Department of Management Studies, IIT Delhi (Year-2008)

I) Evaluator

1. National Institute of Electronics & Information Technology (NIELIT), (erstwhile DOEACC Society): Evaluator for paper Code: M2-RIII, during the period from 2002-2010
2. Indira Gandhi National Open University (IGNOU):IGNOU Code: IG5739. I have set papers for BCA, MCA, and MBA and evaluated papers for the MCA subject, MCSE-004 Numerical and Statistical Computing.

J) Summer/Winter Schools/Training Programmes organized

Sl. No.	Title	Venue	Duration	Sponsoring Authority
1	Summer training for B.Tech Students	Indira Gandhi Institute of Technology	Six Weeks (2003-2004)	Indira Gandhi Institute of Technology
2	Advanced training program on RDBMS and SQL using MS-SQL Server for IT cadre officers of the Govt. of N.C.T. of Delhi	Indian Institute of Public Administration, Delhi	Ten days (November 2006)	Department of Information Technology, Govt. of NCT of Delhi
3	Conducted Training Programmes for the Staff of SLUSI on Remote Sensing and GIS	Sector-1, NOIDA, UP	5 Days	SLUSI