Dr.Venkata Naga Rani Bandaru

Associate Professor in Information Technology

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- **Location:** Vishnupur, Bhimavaram, Andhra Pradesh, India

Professional Summary

A committed academician and researcher with over 18 years of rich experience in teaching, research, and academic administration in the domain of Computer Science and Engineering. Demonstrates excellence in curriculum development, student mentoring, and institutional development through contributions to NBA, NAAC, and NIRF initiatives. Specializes in cutting-edge technologies including Artificial Intelligence, Cybersecurity, Blockchain, Cloud Computing, and Internet of Things (IoT). Holds a strong publication record with 16+ research papers, 2 patents, and active participation in national and international projects. Known for organizing FDPs, seminars, and scholarly events, and providing leadership in internal academic quality audits and academic planning initiatives. Also serves as an advisory board member driving strategic industry collaboration and creating exclusive internship opportunities for high-achieving students.

Education

Ph.D. in Computer Science and Engineering	**SRM University**, Kattankulathur, Tamil Nadu
Dec 2024	Ph.D. Completed: Focused on Blockchain-based OMKHE (Optimal Multi-Key Homomorphic Encryption), Cryptographic Techniques, and AI-driven Security and Privacy Models in Cyber-Physical Systems. Successfully defended and awarded the degree.
M.E. in Computer Science and Engineering	**Sri Krishna Engineering College**, Tamil Nadu
June 2009	Secured 76% marks. Focus areas included Advanced Operating Systems, Compiler Design, and Distributed Computing.
B.E. in Computer Science and Engineering	**Sri Krishna Engineering College**, Tamil Nadu
June 2005	Graduated with 75% marks. Built strong foundational knowledge in C, Java, Operating Systems, and Computer Networks.

Professional Experience

- **Associate Professor**, Department of Information Technology   **Feb 2021 – Present**
  Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh
  Responsibilities:

  - Teaching UG/PG courses in AI, IoT, Compiler Design, Python Programming, and Data Visualization.
  - Coordinating student research projects and mentoring for internships.
  - Contributing to institutional accreditations such as NBA, NAAC, and NIRF.
  - Organizing FDPs, workshops, and curriculum enrichment sessions.
  - Spearheading outcome-based education and assessments initiatives.

- **Assistant Professor (Sr. Grade)**, Department of CSE   **June 2017 – Apr 2020**
  SRM Easwari Engineering College, Chennai
  Responsibilities:

  - Delivered advanced lectures and handled labs in Operating Systems and Software Project Management.
  - Actively involved in project reviews, university exam evaluation, and student guidance.
  - Developed research proposals and guided UG/PG scholars in IEEE publication projects.

- **Assistant Professor & HoD**, Department of CSE   **July 2012 – May 2017**
  Gopal Ramalingam Memorial Engineering College, Chennai
  Responsibilities:

  - Led department-level initiatives, curriculum planning, and faculty development programs.
  - Acted as NBA Coordinator and IQAC representative for academic audits and improvements.
  - Supervised project submissions and managed student placements coordination.

- **Assistant Professor & HoD**, Department of CSE   **June 2010 – June 2012**
  RRASE College of Engineering, Chennai
  Responsibilities:

  - Oversaw academic operations, research promotions, and quality assurance in the department.
  - Led the internal and external audit preparations for NAAC/NBA and ISO certifications.

- **Assistant Professor**, Department of CSE   **June 2009 – June 2010**
  Sri Krishna Engineering College, Chennai
  Responsibilities:

  - Taught Programming in C, Data Structures, and Internet Technologies.

- Played a key role in deploying campus-wide intranet solutions.

- **Lecturer**, Department of CSE   **June 2005 − June 2007**
  Sri Krishna Engineering College, Chennai
  Responsibilities:

    - Conducted labs and tutorials in Programming, OOPs, and UNIX Systems.
    - Managed departmental student records and examination coordination.

Subjects Taught − Undergraduate and Postgraduate

- Data Visualization
- Machine Learning
- Internet of Things (IoT)
- Data Analytics
- Compiler Design
- Object-Oriented Programming (OOP)
- Operating Systems
- Software Project Management
- Software Quality Management
- Python Programming
- Programming in C
- Computer Networks
- Advanced Operating Systems
- Software Process Management

Laboratory Courses Conducted

- Computer Practice I & II (UNIX)
- Data Structures Lab
- System Software Lab
- Object-Oriented Programming Lab
- Operating Systems Lab
- Internet Programming Lab
- Business Application Software Lab
- Open-Source Technologies Lab
- Advanced Python Programming Lab
- Software Components and Testing Lab

Technical Skills and Tools

- **Programming Languages:** Python, C++, C
- **Web Technologies:** JEE (JDBC, Servlets, JSP), HTML, CSS, JavaScript
- **Data Science & ML Tools:** Scikit-learn, TensorFlow, Google Colab, Jupyter Notebook, MATLAB

- **Databases:** MySQL, MongoDB, Firebase

- **Frameworks & Platforms:** Flask, Django, Streamlit

- **Simulation Tools:** NS2, Cooja

- **Cloud Platforms:** Google Cloud Platform (GCP), Microsoft Azure

- **Servers:** Apache Tomcat

- **Operating Systems:** Windows 10/11, Linux (Ubuntu), UNIX System Services (USS)

- **Version Control:** Git, GitHub

- **IDEs and Editors:** VS Code, Eclipse, PyCharm, NetBeans

Research Publications

1. Bandaru, V.N.R., Visalakshi, P. (2024). *EEMS - Examining the Environment of the Job Metaverse Scheduling for Data Security.* In Cognitive Computing and Cyber Physical Systems. IC4S 2023. LNCS, vol 536. Springer, Cham. DOI

2. Bandaru, V.N.R., Posina, J.P., Ramarao, V.K., Rahul, Y., Tejaswi, S., Durga Prasad, U. (2024). *Advanced Child Safety and Monitoring System.* Int. J. of Scientific Engineering and Science, 8(2), 211-252. PDF

3. Kakarla, N.V.R., Bandaru, V.N.R., Muddurthi, C.M., Nulu, L.K., Bonam, J.V.S. (2024). *Medizin: Revolutionizing Healthcare Management.* IJSES, 8(1), 11–14. PDF

4. Bandaru, V.N.R., Tejaswini, A.S., Jaswanth, A., Prasanth, D., Vasavi, M.M., Jhonathan, P. (2024). *Plant Disease Detection and Classification with Deep Learning.* IJSES, 8(2), 65–68. PDF

5. Bandaru, V.N.R., et al. (2024). *Enhancing Privacy Measures in Healthcare within Cyber-Physical Systems through Cryptographic Solutions.* EAI Endorsed Transactions on Scalable Information Systems, 11(6). DOI

6. Bandaru, V.N.R., Kaligotla, V.S.H.G., Varma, U.D.S.P., Prasadaraju, K., Sugumaran, S. (2024). *Enhancing Data Security in IoT-enabled Smart Energy Systems via Lightweight Cryptographic Techniques.* IOP Conf. Series: EES, 1375(1), 012003. DOI

7. Bandaru, V.N.R., Visalakshi, P. (2023). *BDBC - Block-Chain Data Transmission Using Blowfish Security.* IJISAE, 12(5s), 370–378. Link

8. Bandaru, V.N.R., Visalakshi, P. (2023). *BDCT - Blockchain-Based Decentralized Computing and Tamper Resistance for Cloud Storage.* IEEE AGEC 2023. IEEE Link

9. Kasireddy, I., Padmini, K., Ramarao, R.V.D., Seshagiri, B., Bandaru, V.N.R. (2023). *Solar Energy Prediction using ML with SVR Algorithm.* IC4S 2022. LNCS, vol 472. Springer. DOI

10. Bandaru, V.N.R., Visalakshi, P. (2022). *Blockchain Enabled Auditing with Multi-Key Homomorphic Encryption.* Concurrency and Computation: Practice and Experience, 34(22), e7128. DOI

11. Rao, B.K., Saranya, A., Saibaba, V., Mamatha, P.G., Sahu, D.N., Bandaru, V.N.R. (2022). *Security Algorithm Analysis and Implementation in an IoT Environment.* NeuroQuantology, 20(9), 2731–2742. DOI

12. Bandaru, V.N.R., Atchana, V.G., Garrugu, S.K., Mude, S.K., Eemani, V.R.J.S. (2021). *A Driving Decision Strategy (DDS) Using Genetic Algorithm for Autonomous Vehicle.* IJRESM, 4(10), 189–192. PDF

13. Bandaru, V.N.R., Kiruthika, S.U., Rajasekaran, G., Lakshmanan, M. (2020). *Device-Aware VOD Services using Bicubic Interpolation on Cloud.* IEEE CICT 2020. IEEE DOI

14. Dankan, V.G., Bandaru, V.N.R., Begum, A.Y., Palanikkumar, D., Jadhav, A.C. (2022). *Internet of Things (IoT): Definitions, Components, Characteristics, and Applications.* In Current Overview on Science and Technology Research, BP International, ISBN 978-93-5547-987-7

15. Bandaru, V.N.R., et al. (2024). *Encryption Techniques in Machine Learning: A Concise Overview.* In: Machine Learning and Cryptographic Solutions for Data Protection, IGI Global. DOI

16. Bandaru, V.N.R., et al. (2024). *Innovative Machine Learning Applications for Cryptography.* IGI Global Book Chapter. DOI

17. Bandaru, V.N.R., Madugula, S., Madhuri, P.K., Sanapathi, A., Kamaja, R.R., Sanapathi, V.A.D.P. (2025). *AI/ML-Enhanced Inter-Satellite Optical Wireless and Fiber Communication for Intelligent 5G/6G Networks.* In: **Terahertz Technology in Microwave and Photonics for Effective Communications** (1st Edition, Pages 24). CRC Press.

Patents

1. **Patent No.: 202221000262 (2022)**
   Title: IoT-Based Omicron Testing Booth Enabled with Thermal Image Detection
   Description: This invention provides a contactless and efficient COVID-19 testing booth equipped with thermal imaging sensors to detect Omicron symptoms in visitors before testing. Patent Details

2. **Patent No.: 202241030707 (2022)**
   Title: IoT and Blockchain Enabled Verifiable Searchable Encryption with Aggregated Authorization using Machine Learning Techniques
   Description: This patent proposes a novel hybrid framework integrating IoT and blockchain for secure, searchable data encryption. It enhances multi-user data access control using ML-based aggregated authorization. Patent Details

Journal Reviewer and Conferences

- Reviewer for the **Journal of Neural Computing and Applications**.

- Reviewer for the **Journal of Concurrency and Computation: Practice and Experience**.

- Technical Program Committee Member – **4th EAI International Conference on Cognitive Computing and Cyber Physical Systems (EAI IC4S 2023)**.

- **ACM Certified Reviewer (2025)**
  Successfully completed ACM's Reviewer Training and Certification course and recognized as an ACM Certified Reviewer, eligible to serve as a peer reviewer for ACM Journals, Magazines, SIGs, and Conferences.

Submitted Proposals

- Submitted AICTE Training And Learning (ATAL) Academy proposal titled *"Future-Ready Cyber-Physical Systems and Cyber Security with AI"*.

- Submitted research paper to NIT Warangal titled *"Intrusion Detection Systems in IoVT Using Hyperparameter Tuned Ensemble Classifiers"*.

- Submitted DST proposal in collaboration with a Singapore team under the *INDIA-SINGAPORE CALL FOR JOINT PROJECT PROPOSALS 2025*, with a budget of INR 1 crore.

- **AI-Based Retrieval of Atmospheric Motion Winds**
  Led a research initiative applying ML, AI, and ARIMA models to Atmospheric Motion Vectors (AMVs) from Indian satellites (ISRO GEO), enhancing wind prediction models for weather and climate studies, with the budget of INR 28 lakhs.

- IIIT-H Data IHub Foundation Research Proposal (Oct 2025) *A Home-Based System for Early Detection of Maternal Health Complications in Postpartum Women*
  Duration: Jan–Dec 2026. Focused on developing a mobile app integrated with Bluetooth sensors and AI-based risk scoring for early detection, clinician triage, and ethical data handling.

- **IIIT-H Data IHub Foundation Research Proposal (Oct 2025)**
  Internet of Bodies (IoB) Based Secured Ecosystem for Personalized Remote Monitoring and Treatment Planning
  Duration: Jan–Dec 2026. Aims to build a secure IoB data architecture with Edge AI, blockchain-based protection, and federated learning for adaptive treatment planning.

Certificates

- Certificate of Appreciation in R&D Showcase on Research Day (22-03-2025) for mentoring student paper presentations.

- Recognized TPC Member in **5th EAI IC4S 2024** and reviewer for **EAI IC4S 2023**.

- Participated in 5-day FDP on *Cloud Architecture*, held from 18–22 November 2024.

- Participated in the *International Conference on Recent Advances in Sustainable Engineering and Future Technologies*, Hyderabad, 26–28 December 2024.

- Selected for Refresher Course on ICT by UGC-Malaviya Mission Teacher Training Centre, Punjabi University, 19 Nov–4 Dec 2024.

- Completed Online Course on *AI/ML for Geodata Analysis*, organized by ISRO.

- Earned certificate in FDP on *Green Energy Resources, Smart Grid Technologies and Emission-Free Vehicles*, April 22–27, 2024.

- Best Paper Award in IOP Conference Series: Earth and Environmental Science for the paper titled *"Enhancing Data Security in IoT-Enabled Cloud Computing Environment through Lightweight Cryptographic Techniques"*.

- AICTE-ATAL FDP Certificate on *Design Thinking and Prototype for Industry 4.0*, organized by SVECW, 20–25 November 2023.

- Completed *30-Day Data Analytics Masterclass* by Pantech eLearning.

Guest Lectures Delivered

- Delivered a guest lecture at **Smt. B. Seetha Polytechnic** on *Object-Oriented Programming in Python, File Handling, and Exception Handling* for III CME students between 10th and 16th March.

- Delivered a guest lecture at **RRASE College of Engineering, Chennai** on *Automata Theory and Compiler Design* as Chief Guest on 11 August 2025, organized by the Department of IT & CSE.

- Delivered a guest lecture at **St. Peter's College of Engineering and Technology, Chennai** on *Innovations in the Role of Image Sampling and Quantization in Digital Image Processing*, organized by the Department of Electronics and Communication Engineering on 15 October 2025.

Collaborations and MoUs

- Facilitated student internships under the domain of **Data Scraping and Analysis** in collaboration with **Blumin Software and Training Consultancy LLP**.

- Established collaboration with **JBM Group – Neel Metal Products Ltd.** to offer **paid internships** for students in real-world industrial projects and manufacturing analytics.

Workshops, FDPs, and Seminars Attended

- **21-Day Masterclass on Python Programming**
  Organized by Pantech e-Learning in 2023. Acted as a Coordinator and resource person for hands-on sessions focusing on real-time applications of Python in data science and automation.

- **AICTE Sponsored Faculty Development Program on Data Science and Machine Learning**
  Attended a one-week FDP focusing on the practical applications of ML algorithms in cybersecurity and healthcare analytics.

- **Workshop on Blockchain Applications in Education and Healthcare**
  Participated in a three-day national-level workshop organized by SRM Institute of Science and Technology on the deployment of blockchain in secure academic records.

- **FDP on Cybersecurity Trends and Countermeasures**
  Participated in sessions addressing emerging threats, cryptographic standards, and secure coding practices organized by Easwari Engineering College.

- **National Seminar on Outcome-Based Education (OBE) and NBA Accreditation Process**
  Engaged in strategic sessions focused on curriculum alignment and assessment strategies for NBA accreditation.

- **Two-Day Workshop on Internet of Things (IoT) and Smart Applications**
  Attended hands-on training on IoT kits and protocols, including use cases in smart agriculture and smart homes.

- **Online Training Program on Google Cloud Data Analytics**
  Successfully completed a certified program through Infosys Springboard, focusing on BigQuery, Cloud Functions, and ML APIs.

- **Faculty Development Workshop on Research Methodology and Academic Writing**
  Participated in sessions related to publication ethics, citation indexing, and journal targeting strategies.

Academic Services and Institutional Roles

- **Internal Quality Assurance Cell (IQAC) Member**
  Contributed to institutional policy formation, internal audits, and academic performance evaluations.

- **NAAC and NBA Internal Auditor**
  Actively involved in preparing Self Study Reports (SSR) and Self Assessment Reports (SAR) across multiple accreditation cycles.

- **NIRF Coordinator (2017–2020)**
  Handled data collation, metric formulation, and submission of annual NIRF rankings for the institution.

- **Academic Audit Committee Member**
  Reviewed and audited teaching-learning processes, student evaluation systems, and syllabus coverage for quality improvement.

- **AICTE Compliance Coordinator**
  Oversaw institutional statutory disclosures and managed mandatory AICTE documentation and submission protocols.

- **ISO Documentation and Quality Coordinator**
  Managed audit readiness, process standardization, and quality manuals aligned with ISO certification standards.

- **Institutional Website Coordinator**
  Managed and updated the academic sections of the institution's official website, ensuring timely content flow and digital compliance.

- **Mock Interview Panel Member – Placement Cell**
  Conducted grooming and technical interview sessions for pre-final and final-year students to improve placement readiness.

- **Editorial Team – Newsletter and Technical Magazine**
  Contributed articles, proofread technical submissions, and coordinated publication workflows for institutional outreach.

- **Member – Cultural and Student Affairs Committee**
  Played a key role in organizing college fests, student induction programs, and awareness campaigns.

Awards and Achievements

- **"Young Researcher of the Year 2025" Award** – Conferred by the London School of Digital Business (UK) at the LEAP 2025 Awards in recognition of outstanding research excellence and global academic contributions. The event brought together distinguished scholars and leaders from over 70 countries.

- **"GREAT TEACHER" Award** – Conferred by Gopal Ramalingam Memorial Engineering College in recognition of exceptional dedication and performance in teaching on Teacher's Day.

- **Academic Excellence Recognition** – Felicitated by Sri Krishna Group of Engineering Colleges for consistent academic performance and mentoring success (2005–2009).

- **Textbook Author** – Authored and published the academic textbook titled *"Fundamentals of Computer Programming"* through CBA Publications, Chennai.

- **Masterclass Coordinator – Python Programming (2023)**
  Successfully coordinated a 21-day National-level Masterclass on Python Programming in collaboration with Pantech eLearning.

- **Google Cloud Internship Recognition**
  Awarded digital badge by Google for completing the *Infosys Springboard Internship on Google Cloud Data Analytics.*

- **Outstanding Reviewer Recognition**
  Received Best Reviewer award for valuable reviews at IEEE-sponsored international conferences: ICCCIET 2018 and EAI IC4S 2023.

- **Token of Appreciation – "Genius" Award**
  Honored by Dr. Murali Krishna (Dean – Academic Planning, VIT) with a commemorative book for contributions to student research guidance.

- **First Prize Winner – Inter-College Sports Competitions**
  Secured first place in CoCo, Chess, and Badminton events across district-level inter-college tournaments.

- **NSS Coordinator**
  Served as the department NSS Coordinator, actively organizing student community engagement and development programs.

- **Outreach Program Lead – Z.P. High School Plus, Rayakuduru (03 April 2025)**
  Led a seven-member faculty team in delivering awareness sessions to students (8th–Inter+2) on topics like GenAI, Career Guidance, Digital Wellbeing, and Vedic Maths.

- **Project Title: FinGenius – AI Financial Chatbot**
  Developed a user-friendly AI-powered chatbot using RAG (Retrieval-Augmented Generation) for financial learning, advisory, expert podcasts, and real-time news updates.

Ph.D. Supervision

- Currently supervising 4 Ph.D. research scholars under SRM Institute of Science and Technology, Kattankulathur (KTR) Campus, in the areas of Cybersecurity, Blockchain, AI, and Cloud Computing.

Professional Memberships

- **Member, Institution of Engineering and Technology (IET)**
  Active member contributing to technical knowledge exchange and academic collaboration within the engineering community.

- **Member, Computer Science Teachers Association (CSTA)**
  Engaged in professional development activities focused on computer science education, pedagogy, and curriculum innovation.

- **Member, ISTE (Indian Society for Technical Education)**
  Participated in multiple workshops and conferences to support innovation in technical education.

- **Reviewer, IEEE and Springer Conferences and Journals**
  Served as peer reviewer for select research papers in blockchain, cybersecurity, and cloud computing domains.

- **Contributor, Google Developer Groups – Academic Research**
  Participated in AI/ML-related academic outreach, prototype discussions, and technical sessions.

Personal Information

Name	Dr. Venkata Naga Rani Bandaru
Date of Birth	02 July 1983
Gender	Female
Nationality	Indian
Marital Status	Married
Languages Known	English, Telugu, Tamil
Current Address	Vishnupur, Bhimavaram, Andhra Pradesh, India
Contact Numbers	+91 8668165871 / +91 9952054318
Email ID	venkatanagarani.b@vishnu.edu.in
LinkedIn	linkedin.com/in/dr-venkata-naga-rani-bandaru
Google Scholar	scholar.google.com/citations?user=N9pceegAAAAJ
ORCID ID	0000-0002-0715-9220
Researcher ID	PA-2013-0030
Course Networking	https://www.thecn.com/VB428

Declaration

I hereby declare that the information provided above is accurate and true to the best of my knowledge. I take full responsibility for the correctness of the particulars mentioned in this curriculum vitae.

Place: Bhimavaram   **Signature:** _____

 Date: December 11, 2025   **Name:** Dr. Venkata Naga Rani Bandaru