B V SURYA VARDHAN

Present Address:	Contact and Social	Permanent Address:
House no A75, Vasant Kunj New Delhi		House No VB16/2 Bharat Mata Colony, Railway Colony **Bilaspur**
	(Mob): +917397827020	
	Email suryavardhan@students.vnit.ac.in suryavardhan93@gmail.com	

Social Id's :

1. **LinkedIn** - https://www.linkedin.com/in/suryavardhanchinni/
2. **Google Scholar** - Surya Vardhan - Google Scholar
3. **Orcid Id** - https://orcid.org/0000-0002-7747-412X

Summary:

B V Surya Vardhan is currently working with CEEW (Council of Energy Environment and Water) as Research Analyst. He has obtained his **PhD from VNIT Nagpur** (Visvesvaraya National Institute of Technology) in **"Energy Transition strategies using Artificial Intelligence and Machine Learning for optimal operation of Grid Integrated Renewable Sources."** under Ministry of Education fellowship by Government of India where he carried out his research activities in Non-Conventional Electrical Engineering Lab (National Laboratory of India funded by Indian Government) of VNIT. He has received his **Master's degree in Integrated Power System from VNIT Nagpur under MHRD (Ministry of Human Resource and development)**, India Scholarship in 2019. He is a Life Associate Member of SEEM (Society of Energy Engineers and Managers). He is a recipient of SERB (Science and Engineering Research Board, Government of India) fellowship for Young Indian Scientists. **His research interest includes Grid integration issues, Power scheduling and management, Impact of protection in new and resilient grids, Application of Machine Learning and Deep Learning techniques in Demand Side Management, renewable energy production etc. of power system.** He has published his work with various reputed Publishers and as of now he has Authored, Co-Authored around 20 publications. He has also reviewed manuscripts for Elsevier and Springer and various IEEE conferences.

Besides Academics, he has actively participated in various sporting events like Football, Badminton, Cricket etc. in winning causes and has acquired appreciable skills. He was selected for National Level Badminton Tournament by winning state level tournaments. He is a trained Hindustani Classical Musician and has earned decent accolades. He has Keen Interest in International Relations specifically issues related to Global South , India's soft Power , Act East Policy etc.

His works can be accessed from:-

Google Scholar - https://scholar.google.com/citations?user=sqCAwOYAAAAJ
Orcid Id - https://orcid.org/0000-0002-7747-412X

Core Competitiveness:

Academic Qualification:

Course	Institution	Board /University	Year of Completion	Performance (%)
PhD	Visvesvaraya National Institute of Technology ,Nagpur	Visvesvaraya National Institute of Technology ,Nagpur	2024	Over (20 + Publications)
M -tech (By Research)	Visvesvaraya National Institute of Technology ,Nagpur	Visvesvaraya National Institute of Technology ,Nagpur	Completed	CPI - 7.0 (6.98) Project- 10.0
B.E. (EEE)	O.P Jindal Institute of Technology Punjipathra (raigarh ,Chhattisgarh)	Chattisgarh Swami Vivekanand Technical University , Bhilai , Chhattisgarh	2014	CPI-7.92
12th Board	Delhi Public School Bhilai (C.G)	CBSE	2010	75%
10th Board	Kendriya Vidyalaya ,Bilaspur (C.G)	CBSE	2008	86.6%

Work Experience

Full time (Council on Energy, Environment and Water, CEEW) **From August 2023 - Present**	1. Working on issues related to Applied Data science in the field of Electric Power system like off shore, power system optimization for optimal energy mix specifically **Production Cost Modelling, Resource Adequacy modelling etc.** 2. Contributing to the power markets team of CEEW which advises Government of India and various state governments on issues related to Power sector.
Internship (Power System Modelling) SEEM (Society of Energy Engineers and Managers) **Duration – 6 Months**	Worked On Issues related to Power System Restructuring, Demand Forecasting, Scheduling, and Power System Optimization Techniques etc. using Artificial Intelligence!!!! **Skills:** Power System Analysis, Optimization, Machine Learning, MATLAB, Python (Programming Language) ,Gurobi, YALMIP, Demand Forecasting, Energy Modelling

Collaborative Project Experience

1. Worked on **Load Forecasting of Mahasamund, Chhattisgarh Distribution System Operator**.
2. Worked with **Warsaw University Poland on Euro Grid Data**.
3. Worked with **Central Electricity Authority (CEA) of India on Tamil Nadu Grid Data**.
4. Worked on **Load Forecasting and power system projects in Collaboration with Aarhus University Denmark.**

Societies and Memberships

SEEM (Society of Energy Engineers and Managers)	Life Associate Member
IEEE	Student Member
IEEE Power and Engineering society	Student Member

Computer Skills

Languages	C,C++, Matlab, Python, GAMS, Simulink, Homer Pro , Excel, SAM, Grid Path (For Modelling) ,SAM (NREL) etc.
Domains Involved	Power Systems, Machine Learning, Data Analysis

Scholarships:

➢ **International Grant for Young Scientists of India Issued by Science and Engineering Research Board** (Statutory Body Established Through an Act of Parliament : SERB Act 2008) Department of Science and Technology, Government of India · Oct 2022

➢ **MHRD (Ministry of Human Resource and Development) Govt. of India** Scholarship (2016-2019)

➢ **Ministry of Education Govt. of India** Fellowship (2019-Present)

Training:

➢ Completed 45 days of Industrial Training from NTPC Seepat Bilaspur.
➢ Completed One-month Industrial Training from South eastern central Railway.

Areas of Interest:

➢ Power System Restructuring (Scheduling ,Pricing ,Trading)
➢ Demand Side Management
➢ Power System Protection
➢ Machine Learning Models in Domain of Power Systems
➢ Data Analysis Models in Domain of Power Systems
➢ Robotics and their working Mechanisms

Publications:

CONFERENCE PAPERS:

1. **B. V. Surya Vardhan**, M. Khedkar and V. Suresh, "Hyper-Parameter Tuned Short Term Load Forecasting Using Stochastic Classifier-Regression Mapping For Power System Operator," 2022 IEEE PES 14th Asia-Pacific Power and Energy Engineering Conference (APPEEC), Melbourne, Australia, 2022, pp. 1-6, doi: 10.1109/APPEEC53445.2022.10072174.

2. **B. V. S. Vardhan**, M. Khedkar and P. Thakre, "A Comparative Analysis of Hold Out, Cross and Re-Substitution Validation in Hyper-Parameter Tuned Stochastic Short Term Load Forecasting," 2022 22nd National Power Systems Conference (NPSC), New Delhi, India, 2022, pp. 448-453, doi: 10.1109/NPSC57038.2022.10069288.

3. **B. V. S. Vardhan**, M. Khedkar and K. Shahare, "A Comparative Analysis of Various Stochastic approaches for Short Term Load Forecasting," 2022 International Conference for Advancement in Technology (ICONAT), 2022, pp. 1-6, doi: 10.1109/ICONAT53423.2022.9725931.

4. **B. V. S. Vardhan**, M. Khedkar, A. Shrivastav, K. Shahare, N. K. Kulkarni and P. Keshker, "Impact on Grid Side Protection in a Power System Network due to Fault Current Contribution of Distributed Generation sources," 2021 IEEE 2nd International Conference on Smart Technologies for Power, Energy and Control (STPEC), 2021, pp. 1-6, doi: 10.1109/STPEC52385.2021.9718664.

5. **B. V. S. Vardhan**, M. Khedkar, K. shahare and B. Ramesh, "Modelling based Approach for Day–Ahead Scheduling of Dynamic Market Participants for Distribution System," 2021 2nd International Conference for Emerging Technology (INCET), 2021, pp. 1-6, doi: 10.1109/INCET51464.2021.9456303.

6. Thakre, P., Khedkar, M., **Vardhan, B.V.S.** (2024), "A Comparative Analysis of Short Term Load Forecasting Using LSTM, CNN, and Hybrid CNN-LSTM". In: Panda, G., Ramasamy, T.N., Ben Elghali, S., Affijulla, S. (eds) Digital Communication and Soft Computing Approaches Towards Sustainable Energy Developments. ISSETA 2023. Innovations in Sustainable Technologies and Computing. Springer, Singapore. https://doi.org/10.1007/978-981-99-8886-0_16

7. Ayush Shrivastav,M Khedkar ,B V Surya Vardhan , "Photo Voltaic Power Forecasting using Regression Analysis for Power System Operator" 2022 International Conference on Contemporary Engineering and Technology.

8. N. K. Kulkarni, M. Khedkar, A. Batane and **B. V. Suryavardhan**, "Reliable Applicant for Passive Approach-Based Anti-Islanding Protection for Different Grid Penetration Levels of Inverter-Based Distributed Generation," 2022 International Conference for Advancement in Technology (ICONAT), 2022, pp. 1-6, doi: 10.1109/ICONAT53423.2022.9726065.

9. B. Ramesh, M. Khedkar and **B. V. S. Vardhan**, "Priority Based Optimal Load Shedding in a Power System Network under Contingency Conditions," 2022 International Conference for Advancement in Technology (ICONAT), 2022, pp. 1-5, doi: 10.1109/ICONAT53423.2022.9725967.

10. **BVSuryaVardhan**, MohanKhedkar, NitinKulkarni "Impact of Sizing of Grid Tied Inverter based Distributed Generation Source on settings of protection equipment". 2019 International Conference on Contemporary Engineering and Technology.

11. **BVSuryaVardhan**, MohanKhedkar, NitinKulkarni "Impact on Fuse Settings and Size of Photovoltaic Distributed Generation Source Due to Fault Current". , National conference on sustainable Energy (NCOSE-2018).

12. **B V Surya Vardhan** "Globalization of Indian Education System", 2011 National conference, value education – OPJIT RAIGARH

JOURNAL PAPERS:

1. **B.V. Surya Vardhan**, Mohan Khedkar, Ishan Srivastava, Effective energy management and cost effective day ahead scheduling for distribution system with dynamic market participants, Sustainable Energy, Grids and Networks, Volume 31,2022,100706, ISSN 2352-4677, https://doi.org/10.1016/j.segan.2022.100706. **(SCI Indexed)**

2. **B V Surya Vardhan**, Mohan Khedkar & Ishan Srivastava (2021) Cost Effective Day -Ahead Scheduling with Stochastic Load and Intermittency Forecasting for Distribution System Considering Distributed Energy Resources, Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, DOI: 10.1080/15567036.2021.1983669 **(SCI Indexed)**

3. **Vardhan, B.V.S.**; Khedkar, M.; Srivastava, I.; Thakre, P.; Bokde, N.D. A Comparative Analysis of Hyperparameter Tuned Stochastic Short Term Load Forecasting for Power System Operator. Energies 2023, 16, 1243. https://doi.org/10.3390/en16031243 **(SCI Indexed)**

4. **B.V. Surya Vardhan**, Mohan Khedkar, Ishan Srivastava, Siba Kumar Patro, Impact of integrated classifier — Regression mapped short term load forecasting on power system management in a grid connected multi energy systems, Electric Power Systems Research, Volume 230,2024,110222, ISSN 0378-7796, https://doi.org/10.1016/j.epsr.2024.110222. **(SCI Indexed)**

5. Panigrahi, R., Patne, N.R., **Surya Vardhan, B.V**. et al. Short-term load analysis and forecasting using stochastic approach considering pandemic effects. Electr Eng (2023). https://doi.org/10.1007/s00202-023-02135-4 **(SCI Indexed)**

6. Srivastava, I.; Bhat, S.; **Vardhan, B.V.S**.; Bokde, N.D. Fault Detection, Isolation and Service Restoration in Modern Power Distribution Systems: A Review. Energies 2022, 15, 7264. https://doi.org/10.3390/en15197264 **(SCI Indexed)**

7. Ashwini D. Manchalwar, Nita R. Patne, **B. V. Surya Vardhan** and Mohan Khedkar, "Peer-to- peer energy trading in a distribution network considering the impact of short-term load forecasting" Electrical Engineering Springer. https://doi.org/10.1007/s00202-023-01793-8. **(SCI Indexed)**

8. **BVSuryaVardhan**, MohanKhedkar, NitinKulkarni, "Impact on Fuse Settings and Size of Photovoltaic Distributed Generation Source Due to Fault Current. IJRTE International Journal of Recent Technology and Engineering(TM) Exploring Innovation | ISSN:2277-3878(Online) | Reg. No.: C/819981 | Published By BEIESP | B Impact Factor: 5.92 | Scopus Journal **(Scopus Indexed)**

Magazines :

1. **B.V. Surya Vardhan**, Mohan Khedkar , "Energy Saving Strategy For a Power System Operator Using Stochastic Short Term Load Forecasting Techniques" , Society of Engineers and Managers (SEEM),January to March 2022 , Vol 15 –No.1 ISSN-0974-0996
2. The Role of Advanced Meter Infrastructure (AMI) for Electricity Theft Detection in Smart City. Link–https://smartcities.ieee.org/newsletter/march-2023/the-role-of-advanced-meter-infrastructureami-for-electricity-theft-detection-in-smart-city
3. The Role of Artificial Intelligence and Block chain in Advanced Power Systems for Smart Cities. Link-https://smartcities.ieee.org/newsletter/march-2023/the-role-of-artificial-intelligence-and-blockchain-in-advanced-power-systems-for-smart-cities

Reviewer:

1. **Elsevier** – (A) Sustainable Energy Grids and Networks.
   (B) Engineering Applications of Artificial Intelligence

Talks and Conference chairs:

1. **Talks:** Given a talk in IEEE Green energy conference
2. **Conference chairs –** Conducting special session in 7th International Conference on Recent Trends in Image Processing & Pattern Recognition (RTIP2R)

PhD Project:-

Project Title:	Energy Transition strategies using Artificial Intelligence and Machine Learning for optimal operation of Grid Integrated Renewable Sources.
Duration:	July 2019 – Present
Output	**12 Conference papers, 8 Journal Papers, 3 Magazine Articles.**
Software Requirements:	Matlab ,Python ,GAMS, Homer Pro, Excel

Description: Optimal design of Power System Protection, compensation and Power system modelling of various Components (Load Aggregators, Compensators, Renewable Energy Resources, batteries, Micro Grid etc.) Power trading algorithms, Load Forecasting, Micro grid Forecasting using Machine learning and Deep Learning, Deregulation of Power system etc.

The research that I carried out in these topics is published in various reputed journals and conferences with diverse publishing houses like ELSEVIER, TAYLOR and FRANCIS, IEEE etc. Details of which can be accessed from PUBLICATION SECTION of my profile!!!

M tech Project:-

Project Title:	Fault current Contribution of Grid Connected PV Panel
Duration:	July 2016 – Jun 2019
Output:	**2 conferences and 1 Journal Paper**
Software Requirements:	Matlab ,Simulink ,PSCAD

Description: This projects talks about Grid connected inverter based PV and its Fault current contribution, hence decides the Size, Location and settings of protection equipment.

1. Fault Current Contribution in Grid Connected Photo Voltaic System.
2. Protection Settings and its Impact on Photo Voltaic Systems.
3. Relay Miss-Coordination of Photo Voltaic System connected to a Bus.
4. Integration of PV (Photo Voltaic System) to the Grid.
5. Design of MPPT controllers, PWM (Pulse Width Modulation) Converters Techniques, DC-DC Converters, PLL (Phased Locked Loop) Systems.
6. Algorithms for designing Relays.
7. PID Controllers.
8. Realization of all the above areas with Matlab /Simulink.

The research that I carried out in these topics is published in various reputed journals and conferences with diverse publishing houses like ELSEVIER, TAYLOR and FRANCIS, IEEE etc. Details of which can be accessed from PUBLICATION SECTION of my profile!!!

Btech Academic Project 1: Minor Project

Project Title:	HYBRID POWER PLANT
Duration:	6 MONTHS
Software Requirements:	**LAB VIEW AND KIEL**

Description: Simultaneous working of Solar and Thermal Power Plants for efficient and optimal operation.

Btech Academic Project 2: Major Projection

Project Title:	Control of A.C. motor speed using "ANDROID" software and "BLUETOOTH"
Duration:	6 months
Tools Used:	**ANDROID SOFTWARE**

Description: To control the speed of D.C motor using Android software (Via BLUETOOTH).A wireless technology which is convenient form of operation

Achievements & Extra Curricular:

- Elected as **Life Associate Member SEEM (Society of Energy Engineers and Managers).**
- Received certificate of appreciation for participating in **"Art of Living"** events.
- OVERALL AMCAT SCORES :-
    1. QUANTITATIVE APTITUDE- 98.7 PERCENTILE
    2. ELECTRICAL ENGINEERING-98.8 PERCENTILE
    3. ELECTRONIC AND SEMICONDUCTOR ENGINEERING-87.9 PERCENTILE
    4. LOGICAL ABILITY - 82.7 PERCENTILE
    5. ENGLISH- 80.2 PERCENTILE
- **First in "BOURNVITA QUIZ CONTEST"** and a merit certificate by "DEREK O BRIEN".
- 94 percentile in CMAT 2014
- **QUALIFIED GATE 2016,2017,2018**
- Merit certificate in "ORRISA ICSE TALENT SEARCH EXAM".
- **First in "INTER BRANCH FOOTBALL COMPETITION" 2012.**
- **First in "INTER BRANCH FOOTBALL COMPETITION" 2013.**
- Attended "AUTO WRITING WORKSHOP" organized by IIT B.
- Attended "E-ROBOTICS WORKSHOP" organized by IT-BHU.
- **First in "INTER ZONAL-BADMINTON" competition 2014, Selected for National level badminton competition.**
- 5th in 800m and 1500 m races (ATHLETICS).
- Team leader of 50 members in the campaign of "OLD AGE HOME".A certificate of appreciation by the same.
- Classically **Trained Hindustani Classical Musician (Prathama Paratham and Prathama Dwitiya)**
- **First Position** in singing competition in "Hindi Pakhwada" organized by VNIT Nagpur ➢ Contributions in VIHANG 2017,VNIT
    1. GOT THIRD POSITION IN BADMINTON.
    2. GOT FIRST POSITION IN QUIZ.
    3. GOT SECOND POSITION IN KHO-KHO.
- Contributions in VIHANG 2020,VNIT
    1. GOT SECOND POSITION IN BADMINTON.
    2. GOT FIRST POSITION IN MUSIC

Personal Profile

- Date of Birth :   06/01/1993
- Gender   :   Male
- Father name :   Mr. B V S SUBRAHMAYAM
- Mother tongue :   Telugu
- Nationality   :   Indian
- Marital Status :   Single
- Languages   :   English,Hindi,Telugu.
- Hobbies   :   Playing badminton ,singing ,writing.

I hereby declare that the above information's are true to best of my knowledge.

PLACE: New Delhi, India

Date: 28/05/2024

SURYA VARDHAN