



Dr Suresh Babu Mudunuri

Head, Centre for Bioinformatics Research
Associate Professor, Dept. of IT

suresh.mudunuri@srkrec.edu.in
+919866600002, +919293940004

RESEARCH PROJECTS

- **Collaborator for DBT Project with University of Hyderabad, Hyderabad: 2020 – 2025 (Final Stage of Review)**
Collaborator for University of Hyderabad's DBT Research Project worth **Rs. 5 Crores** (SRKR Component: ~ Rs. 20+ Lakh/-).
Project: Establishment of DBT-Centre for Microbial Informatics: Developing a Novel Computational Approach to generate Genome Based Barcode to catalog Indian Microbial Species.
- **Bioinformatics Research Project Funded by DST-SERB: 2016 – 2019 (Completed)**
Research Project worth **Rs. 22+ Lakh** under progress, sanctioned by SERB, Department of Science & Technology (DST), India under Early Career Research Award (ECRA) Scheme (Total Grant: Rs. 22,26,295/-).
Project: Microsatellites in Human Genome: Development of Algorithms and Web-server for Impact Analysis of Repeats in Diseases.
- **International Bioinformatics Collaboration: 2011 – 2016 (Completed)**
Collaborative work with Dr.Gaurav Sablok, **University of Technology, Sydney** (along with different research groups abroad). Developed bioinformatics software that include FrameOPT, ChloroMitoSSRdb & ChloroMitoSSR, Plant isomiR Atlas, DiffIsomiRs and ChloroPhylo.
- **Collaboration Project with University of Virginia: 2012 – 2015 (Completed)**
Collaborated with Department of Biochemistry & Molecular Genetics, University of Virginia School of Medicine, U.S.A, and developed tRFdb web-server. Work published in 2 highly reputed journals with **impact factors greater than 7**
- **Collaborative Work with CDFD, Hyderabad: 2005 – 2014 (Completed)**
Collaborative Work with Lab of Computational Biology, Centre for DNA Fingerprinting and Diagnostics (CDFD), Hyderabad. Web-servers namely IMEx-web, MICAS, VMD have been developed. The IMEx algorithm and tool developed has been used by several researchers **world-wide and the relevant paper has been cited by 170+ other papers.**

AWARDS / HONOURS

- **Young Researcher Award 2016**

Awarded by Institute of Bioinformatics & Computational Biology (IBCB), Visakhapatnam for distinguished research contribution in the field of Computer Science & Bioinformatics on 25th December 2016.

- **Early Career Research Award**

Project Grant worth Rs. 22,26,295/- sanctioned by SERB, Department of Science & Technology (DST), India for a duration of 3 years (2016-2019).

CERTIFICATIONS

- **Microsoft Academy Certified - Microsoft Specialist in HTML5 with CSS3 and JavaScript** [ID: E163-3309].
- Dale Carnegie Mission10x **Certified Teacher in High Impact Teaching Skills** by Wipro Ltd. in July 2009.
- **NPTEL Certifications:** *Functional Genomics* – Elite 80%, *Introduction to C Programming* – Elite 84% (**Top 5%**), *Problem Solving Through Programming in C* – Elite + Silver 82% (**Top 5%**) and *Biology for Engineers and Non-Biologists* – Elite 68%.

WORKSHOPS/CONFERENCES ATTENDED

1. Two Week **AICTE** Faculty Development Program on **Deep Learning & Big Data Analytics** at SRKR Engineering College (02 NOV 2019 to 14 NOV 2019).
2. One Day InCOB 2018 Workshop on Programmatic Access to Protein Sequence, Function and Structure with UniProt and PDBe at **JNU, New Delhi** (29 SEP 2018).
3. 15 Days Short-Term Bioinformatics Training/Workshop on **Advanced Bioinformatics & NGS** (DNaseSeq) Data Analysis - Online (PUNE) (28 JUN 2017 to 14 JUL 2017).
4. One Day Workshop on Empowering Teaching Excellence through **E-Learning** Platforms at JNTU Kakinada (08 JUL 2017)
5. One Week **ISRO** NNRMS Course on **Space Technology** Applications in Governance and Development at NRSC, Hyderabad (06 MAR 2017 to 10 MAR 2017).
6. Three Day Bioinformatics Workshop on Genomics at Indian Institute of Technology (**IIT**), Delhi (26 SEP 2016 to 28 SEP 2016)

7. One Week **TEQIP Workshop** on Web Application Development using **Python & Django** at SVECW, Bhimavaram (10 AUG 2016 14 to AUG 2016).
8. One Day HOD & Faculty Orientation Program on **E-Learning** at DNR College of Engineering, Bhimavaram (27 AUG 2014).
9. One Day National Workshop on **Bioinformatic Tools** in Diabetic Research at IBCB, Visakhapatnam and JNTU, Kakinada (16 AUG 2014 to 17 AUG 2014).
10. Two Week **ISTE Coordinator Workshop** on Computer Programming at **IIT Bombay** (21 APR 2014 to 26 APR 2014).
11. Two Week **ISTE Workshop** on Database Management Systems GVIT, Bhimavaram (21 MAY 2013 to 31 MAY 2013).
12. Two Day FDP on Knowledge Discovery Practices & Emerging Applications in **Data Mining** at BVCITS, Amalapuram (23 MAR 2013 to 24 MAR 2013).
13. Two Day 4th International Conference on Innovations in the Changing World – DNA 2012 at **University of Hyderabad**, Hyderabad (15 DEC 2012 to 16 DEC 2012).
14. Two Day 1st National Computational Intelligence Colloquium on **Computational Biology** at IEI (India), Visakhapatnam (17 FEB 20102 to 18 FEB 2012).
15. Two Day National Workshop on Practical **Object-Oriented Analysis and Design** at Aditya Engineering Colleges, Surampalem (29 DEC 2011 to 30 DEC 2011).
16. Ten Day **ISTE Workshop** on **Software Development Techniques for Teachers** of Engineering and Science Institutes at IIT Bombay & KIET, Kakinada (05 NOV 2011 to 04 DEC 2011).
17. Two Day **DST National Seminar** on **Translational Research** in Bioinformatics & T2DM at GVP Degree College, Visakhapatnam (17 APR 2011 to 18 APR 2011).
18. One Week **Infosys FDP** Faculty Enablement Program on **Campus Connect** Program at VVIT, Guntur (21 FEB 2011 to 25 FEB 2011).
19. Two Day National Conference on Emerging Trends in **Security and Privacy** at Vignan Institute of Information Technology, Visakhapatnam (19 NOV 2010 to 20 NOV 2010).
20. One Day National Workshop on Quality of Research and **Young Scientist Sensitization** at JNTU, Kakinada (23 OCT 2010).
21. Five Day **International Conference** on Statistics, Probability, Operations Research, Computer Science and Allied Areas, AU, Visakhapatnam (04 JAN 2010 to 08 JAN 2010).
22. Two Day **Wipro Mission10X Workshop** on High Impact Teaching Skills at JNTU, Kakinada (20 JUL 2009 to 21 JUL 2009).

23. Two Week **AICTE FDP on Machine Learning** Techniques and Applications (MLTA-09) at MVGR Engineering College, Vizianagaram (18 MAY 2009 to 30 MAY 2009)
24. One Day National Workshop on **Computational Biology** and Biotechnology at Andhra University, Visakhapatnam (02 JAN 2009).
25. Three Day **36th Annual Scientific Meeting** of Research Society for the Study of Diabetes in India (RSSDI-2008) at HITECH, Hyderabad (21 NOV 2008 to 23 NOV 2008).
26. Two Day Faculty Training Programme – Nasscom IT Workforce Development at **Accenture**, Hyderabad (17 OCT 2007 to 18 OCT 2007).
27. Three Day 3rd **Indo-Australian Conference** on Biotechnology at CDFD, Hyderabad (06 MAR 2006 to 08 MAR 2006).
28. 1 Day **IEEE Tutorial on Linux Cluster Systems** at University of Hyderabad, HYD (20 OCT 2005).
29. Three Day **National Workshop on Soft Computing**, Machine Learning and Bioinformatics Applications at Jamia Millia Islamia University, New Delhi (17 NOV 2004 to 19 NOV 2004).

LIST OF PUBLICATIONS

Journal Papers

1. Kun Yang, Xiaopeng Wen, **Suresh B Mudunuri**, GP Saradhi Varma, Gaurav Sablok (2019) Diff-isomiRs: Large-scale detection of differential isomiRs for understanding non-coding regulated stress omics in plants. *Scientific Reports* 9(1):1406 (NATURE Journal (SCI). Impact Factor: 4.12)
2. Kun Yang, Xiaopeng Wen, **Suresh B Mudunuri** and Gaurav Sablok (2018) Plant IsomiR Atlas: Large Scale Detection, Profiling, and Target Repertoire of IsomiRs in Plants. *Frontiers in plant science* 9:1881 (SCI Journal. Impact Factor: 3.67).
3. Swaroop Chigurupati, Kiran Vegesna, LV Siva Rama Krishna Boddu, Gopala Krishna Murthy Nookala, **Suresh B. Mudunuri** (2018) NO SQL Approach for Handling Bioinformatics Data Using MongoDB. *Emerging Technologies in Data Mining and Information Security*, pp. 281-287 (SPRINGER Book Chapter).
4. Sablok Gaurav, **Suresh B. Mudunuri**, Korneliya Gudys, Kranthi Ch, G P Saradhi Varma and Miroslaw Kwasniewski (2017) Evaluation of Genome Wide Markers and Orthologous Markers in *Brachypodium distachyon*. *Methods in Molecular Biology*, pp. 195-201 (SPRINGER Book Chapter).
5. **Suresh B. Mudunuri**, Ratna Prabha, Dhananjaya P Singh, Gopala Krishna Murthy Nookala (2017) FunGREG 1.0: Online web-repository of microsatellite repeats from fungal genomes. *Helix*, Vol. 7 (1), pp. 869-872

(SCI Journal).

6. Sablok Gaurav, **Suresh B. Mudunuri**, Dave Edwards, and Peter J. Ralph (2016) Chloroplast Genomics: Expanding resources for an evolutionary conserved miniature molecule with enigmatic applications. *Current Plant Biology*, Vol. 7-8, pp. 34-38 (ELSEVIER Journal) .
7. Sablok, Gaurav, GV Padma Raju, **Suresh B. Mudunuri**, Ratna Prabha, Dhananjaya P. Singh, Vesselin Baev, Galina Yahubyan, Peter J. Ralph, and Nicola La Porta (2015) ChloroMitoSSRDB 2.00: more genomes, more repeats, unifying SSRs search patterns and on-the-fly repeat detection. *Database*, Vol. 2015, bav084 (OXFORD / SCI Journal. Impact Factor: 3.97) .
8. Pankaj Kumar, **Suresh B. Mudunuri**, Jordan Anaya, and Anindya Dutta (2015) tRFdb: a database for transfer RNA fragments. *Nucleic Acids Research*, Vol. 43 (D1), pp. D141-D145 (OXFORD / SCI Journal. Impact Factor: 11.56) .
9. Pankaj Kumar, Jordan Anaya, **Suresh B. Mudunuri**, and Anindya Dutta (2014) Meta-analysis of tRNA derived RNA fragments reveals that they are evolutionarily conserved and associate with AGO proteins to recognize specific RNA targets. *BMC Biology*, Vol 12 (1), (2014): 78 (SCI Journal. Impact Factor: 5.77).
10. Suresh B. Mudunuri, Sujana Patnana, and H.A. Nagarajaram (2014) MICdb3.0: a comprehensive resource of microsatellite repeats from prokaryotic genomes. *Database*, Vol. 2014, bau005 (OXFORD / SCI Journal. Impact Factor: 3.97).
11. Gopala Krishna Murthy Nookala, Nagaraju Orsu, Bharath Kumar P, and **Suresh B. Mudunuri** (2013) Performance Analysis and Evaluation of Different Data Mining Algorithms used for Cancer Classification. *International Journal of Advanced Research in Artificial Intelligence*, Vol. 2 (5), pp. 49-55.
12. Gaurav Sablok, **Suresh B. Mudunuri**, Sujana P, and Martina Popova (2013) ChloroMitoSSRDB: A Database of Perfect and Imperfect Repeats in Chloroplast and Mitochondrial Genomes. *DNA Research*, Vol. 20(2), pp. 127-133 (OXFORD / SCI Journal. Impact Factor: 5.41).
13. **Suresh B. Mudunuri**, Prudhvi Ravi Raja Reddy Mallidi, Sujana Patnana, Pallamsetty S, and Appa Rao Allam. (2012) Short Tandem Repeats in Certain Human Genes Reveal A Positive Correlation Towards Evolution. *Advances in Intelligent and Soft Computing*. Vol. 132, pp. 437-443 (SPRINGER Book Article).
14. **Suresh B. Mudunuri**, Pankaj Kumar, Allam Appa Rao, S. Pallamsetty, and Hampapathalu A. Nagarajaram. (2010). G-IMEx: A Comprehensive Software Tool for Detection of Microsatellites from Genome Sequences. *Bioinformatics*. Vol. 5(5), pp. 221-223.

15. **Suresh B. Mudunuri**, Allam Appa Rao, S. Pallamsetty, Priyatosh Mishra and H.A. Nagarajaram. (2009) VMD: Viral Microsatellite Database - A Comprehensive Resource for All Viral Microsatellites. *Journal of Computer Science and Systems Biology*. Vol. 2, pp. 283-286.
16. Allam Appa Rao and **Suresh B. Mudunuri**. (2008) Computational analysis of microsatellites in human Insulin Promoter Factor 1 gene. *Journal of Proteomics and Bioinformatics* Vol. 2(1), pp. 001-004.
17. Allam Appa Rao, G R Sridhar, **Suresh B. Mudunuri**, E Vamsidhar, and Gunna Kishore. (2008) Computational analysis of mutations in colon cancer genes reveals a possible role of microsatellites in mutagenesis. *Journal of Proteomics and Bioinformatics* Vol. 2(1), pp. 036-040.
18. **Suresh B. Mudunuri** and Hampapathalu A. Nagarajaram. (2007). IMEx: Imperfect Microsatellite Extractor. *Bioinformatics*, Vol. 23(10), pp. 1181-1187 (OXFORD / SCI Journal. Impact Factor: 5.48. Cited by 170+ Papers).

Presentations in Conference

1. Srinija Bondada, Kranthi Chennamsetti and **Suresh B. Mudunuri**. (2017) In Silico Analysis of the Distribution of Simple Sequence Repeats in Plastic Eating Bacterium *Ideonella sakaiensis*. *National Conference on Breaking Barriers Through Bioinformatics & Computational Biology*, 31 July & 1st Aug 2017, IIT Delhi, India. (Abstract published in Journal of Proteins & Proteomics)
2. Raju, G. V., P. Srinivasa Rao, Ch Someswara Rao, V. Chandra Sekhar, and **Suresh B. Mudunuri**. (2015) Microsatellite Repeats in Mitochondrial Genomes: A Bioinformatic Analysis. *ACM International Conference on Advanced Research in Computer Science Engineering & Technology (ICARCSET 2015)*, 06-07 Mar 2015, AP, India. (Paper available in ACM Digital Library - ACM DL)
3. Gopala Krishna Murthy Nookala, Vsn Bhushana Rao Adavi, Naga Raju Orsu, Ramya Chiluvuri and **Suresh B. Mudunuri**. (2013) Web-Weka1.0: Online Tool for Comparison of Classification Algorithms of Weka. *ACM 19th International Conference on Management of Data (COMAD 2013)*, 19-21 Dec 2013, Ahmedabad, India. (Paper available in ACM Digital Library - ACM DL)
4. **Suresh B. Mudunuri**, Priyatosh Mishra, and H.A. Nagarajaram. (2012) In Silico Survey of Distribution and Frequency of Imperfect Microsatellite Repeats in Viral Genomes. *IEEE International Conference on Data Science & Engineering (ICDSE 2012)*, 18-20 July 2012, Kerala, India. (Paper available in IEEE Digital Library - IEEExplore)
5. **Suresh B. Mudunuri**, Priyatosh Mishra, and Hampapathalu. A. Nagarajaram. (2012) Distributional Analysis and Motif Frequencies of Compound Microsatellite Repeats in Viral Genomes. *IEEE International Conference on Computing, Electronics & Electrical Technologies (ICCEET*

2012), 21-22 March 2012, Kanyakumari, India. (Paper available in IEEE Digital Library – IEEExplore).

6. **Suresh B. Mudunuri**, Allam Appa Rao, S Pallamsetty and H.A. Nagarajaram. (2010) Comparative Analysis of Microsatellite Detecting Software: A Significant Variation in Results and Influence of Parameters. *ACM International Symposium on Bio-computing (ISB 2010)*, 15-17 February 2010, Kerala, India. (Paper available in ACM Digital Library - ACM DL).
7. **Suresh B. Mudunuri**, Priyatosh Mishra, Allam Appa Rao and S. Pallamsetty. (2010) Short Tandem Repeats Extraction Software: A Comparative Review. *International Conference on Statistics, Probability, Computer Science and Allied Areas (IISA-ISPS 2010)*, 4-8 January 2010, Visakhapatnam, India.
8. **Suresh B. Mudunuri**, Allam Appa Rao and Sridhar G.R. (2008) Computational Analysis of Repeat Patterns in Diabetic Genes. *36th Annual Scientific Meeting of the Research Society for the Study of Diabetes in India (RSSDI 2008)*, 21-23 November 2008, Hyderabad, India.
9. **Suresh B. Mudunuri**, Radha Rama Devi A, MD Bashyam and H.A. Nagarajaram (2006). CEMeRS: CDFD Electronic Medical Record System, *5th International Conference on Bioinformatics (INCOB)*, 2006, New Delhi, India. [Poster Presentation].

EVENTS/CONFERENCES ORGANIZED

1. Organizer/ Convener of **DST National Conference** on Challenges, Approaches and Practical Implementation of Micro Grids by Dept. of EEE, GVIT, Bhimavaram (16 OCT 2013 to 18 OCT 2013). Received Seminar Grant worth **Rs. 1,00,000/-** from DST, Govt. Of India.
2. Co-ordinator for Two Week **ISTE Main Workshop** on Computer Programming conducted by **IIT Bombay** and GVIT, Bhimavaram (20 MAY 2014 to 21 JUN 2014).
3. Organizer / Convener of **DST National Conference** on Recent Trends in Data Mining and Bioinformatics by Dept. of CSE, GVIT, Bhimavaram (15 JULY 2014 to 16 JULY 2014). Received Seminar Grant worth **Rs. 75,000/-** from DST, Govt. Of India.
4. Organizer / Convener of AGASTYA 2K15 – The Technical Fest Department of CSE, GVVIT, Bhimavaram (16 MAR 2015 to 17 MAR 2015).
5. FDP Co-ordinator for Six Day National Faculty Development Program on **IBM Business Analytics** conducted by IBM and APSSDC (21 NOV 2016 to 26 NOV 2016).

6. Convenor & Resource Person for One Day Workshop on Research Methodology and Best Practices in Academic Research, Dept. of IT, SRKR Engineering College, Bhimavaram (16 JUN 2017)

CONSULTANCY / ACADEMIC PROJECTS

- **Consultancy Web Development with University of Hyderabad (2018 – Present)**
Developed Complete Dynamic Web Portals for School of Life Sciences, UOH and Centre for Modelling, Simulation & Design (CMSD).
- **Bhimavaram Online - E-Commerce Portal & APP (2018 - Present)**
Product of I-Hub, SRKREC involving 10 students of IT dept. A complete one-stop portal and mobile app for Online Shopping, Services and News for the people of Bhimavaram.
- **Online Faculty Feedback System of SRKREC (2015 - Present)**
The online faculty feedback system for the students & staff of SRKREC. Modules include - Feedback Session Management, Feedback Reports, Faculty Search, etc.
- **G-Net -Student Performance Management System (2014 – 2015)**
G-Net is a student evaluation system and communication portal developed for CSE department of GVIT. Modules include - student performance evaluation system, department library, department notices/news, individual student logins, etc.
- **Theater Management System (2011 - 2012)**
Software Consultancy Project from Quick Eagle Networks Ltd., Hyderabad carried out at Aditya Engineering College. Acted as Team Lead for this project.
- **CampusNet (2010 - 2012)**
CampusNet is a web-based communication portal with different modules - Campus Alerts, Web-portal with Study Material Zone, Campus News & Office Circulars Zone, Examination & Results Updates, Placement Zone, Video & Polls Zone, Activity Zones, etc.

ADDITIONAL ROLES

- Founder & Director of On-Campus Start-up MCR Web Solutions (2018 to Till Date)
- Head, Centre for Bioinformatics Research, SRKREC, Bhimavaram (2015 to Till Date)
- Head of CSE Department, GVVIT, Bhimavaram (2013-2015)
- Director (Research), GVVIT, Bhimavaram (2013-2015)