

Curriculum Vitae

Dr. Abdulbasid Banga

(B.Sc. (Mathematics), M.C.A., Ph.D.)

**Saudi Electronic University
College of Computing and
Informatics, Computer Science
Department, Jeddah-Male Branch,
Jeddah.
Zip Code: 23442**

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◆ Objectives: -

I aim to contribute significantly to a renowned university or organization in a strategic and impactful role. My goal is to leverage my skills and experience to drive the growth and success of the institution, while fostering my own professional development. I am committed to delivering impactful results that contribute to both the advancement of the organization and my personal and career growth.

◆ Abilities: -

- ❖ Ability to lead the team.
- ❖ Ability to adopt new subjects and technology soon.
- ❖ Ability to communicate effectively with the students and with the managing committee.
- ❖ Hard working on the development of innovative and specific solutions.
- ❖ Analyzing complex processes and extracting core issues.
- ❖ Working under pressure when organizing and managing complex situations and tasks.
- ❖ Capacity to work in a team or individually and take up responsibilities.

◆ Experience: -

More than **21 Years and 7 Months** of experience in Academia, Industry, Research, and Internal/external guidance of Projects.

Academic Experience: (21 Years)

1) Designation: Assistant Professor

**Saudi Electronic University, College of Computing and Informatics, Jeddah-Branch,
Jeddah, Kingdom of Saudi Arabia. (September 2014 to Till Date)**

Conducted Lectures for the following Courses:

- ❖ Computer Organizations
- ❖ Operating Systems
- ❖ Database Management Systems
- ❖ System Analysis and Design
- ❖ Web Technologies
- ❖ Management Information Systems
- ❖ Software Engineering
- ❖ System Integration
- ❖ Enterprise Systems
- ❖ Computer Programming – I & II (Java)
- ❖ Design and Analysis of Algorithm

2) Designation: Assistant Professor

**GLS Institute of Computer Technology (MCA Course), GLS Campus, Law Garden,
Ahmedabad. (August 2010 to August 2014)**

3) Designation: Lecturer

GLS Institute of Computer Applications (BCA Course), GLS Campus, Law Garden, Ahmedabad. (July 2008 to July 2010)

Description:

Conducting Lectures and Lab sessions in **B.C.A. and P.G.D.C.I.A** for the papers:

- ❖ Programming in 'C Language
- ❖ Data & File Structures
- ❖ Internet & HTML Scripting
- ❖ Computer Fundamentals & Data Processing
- ❖ Operating Systems
- ❖ Object-Oriented System Analysis & Design
- ❖ Software Project Management
- ❖ Mathematical Foundations and Computer Science
- ❖ Data Communication & Networking
- ❖ Database Management System

4) Designation: Lecturer

Department of Computer Science, Hemchandracharya North Gujarat University, Patan, [N.G.], India. (December 2003 to April 2007)

Description:

Conducting Lectures and Lab sessions in **M.Sc. (CA & IT) and M.C.A.** for the papers:

- ❖ Software Engineering
- ❖ System Analysis & Design
- ❖ Object Oriented Analysis & Design with UML using Rational Rose software.

Research Experience: (6 years and 6 months)

- ❖ Completed Ph.D. degree in the subject "**Software Estimation Models: Study, Analysis, Comparison, Guidelines, and Proposing a Model for the given Requirement of the Software**"
- ❖ Did research on various estimation Models as well as studied various software sizing and estimation techniques, and provided potential guidelines for the selection of Estimation methods and techniques, which helps the industry estimator for effective and efficient estimation for the project.
- ❖ The first few years just spent on the study of Software Estimation methods and theory to use for live projects.
- ❖ Then I worked on moving to the detailed part of Software Estimation Models and Sizing Techniques to be applied to Software projects.
- ❖ Studied various case studies of Industry live projects that had applied software estimation methods and Models for the Estimation of Cost, Effort, and Resources.
- ❖ For the last 2 years, has been working on finalizing the part for providing the guidelines and selection methodologies for better estimation by deciding the various parameters and factors of the project.

Industry Experience: (1 year and 6 Months)

Designation: Technical Software Engineer

Company: Meditab Software Pvt. Ltd. (May 2007 to June 2008)

401, Iscon Mall, Star Bazar, Satellite Road, Ahmedabad.

Description:

- ❖ Working as a Technical Support Engineer.
- ❖ Deal with USA clients for providing online and On-time Software Solutions.
- ❖ Involved in Manual Software Testing, including functional testing, Black-Box testing, and Unit Testing.
- ❖ Involved in the Installation, Updating, and Upgradation of Medical Software for various USA clients.

Internal / External Project Guide:

- ❖ Final Year Project Supervision in SEU in the last 11 years for the following projects:
 - Online Software Project Tracking and Monitoring
 - Website for Task Force Implementation

- Online Hardware Selling & Maintenance System
 - Website for Islamic Religion Invitation
 - Website for Hajj
 - Wellness Monitoring Systems
- ❖ 8 years' experience in leading the Project team of final year students of B.C.A., M.Sc. (CA & IT), and M.C.A. in their full-time project development.
 - ❖ Served as an External Guide of four project teams in "IBM Academic Initiative- Invite Project for the Gujarat government, tied up with GIL (Gujarat Informatics Limited, Gandhinagar).

Curriculum Activities:

- ❖ Activities at Saudi Electronic University:
 - Designated as a **Member of the BSIT Course Improvement Committee** in August 2024.
 - Designated as a **Member of the BSDS Course Improvement Committee** in March 2024.
 - Designated as a **Member of the BSIT Course Improvement Process** in June 2022.
 - Designated as a **Member of the BSIT Course Improvement Committee** in December 2020.
 - Designated as a **Member of the Steering Committee** since December 2018.
 - Designated as **Course Coordinator** in all the semesters since September 2014.
 - Providing mentoring, advice, and support to students on a personal level.
 - Actively leading Class discussions and encouraging the students to debate.
 - I am an active **member of the Exam Committee**.
- ❖ I am an active member of **IEEE**.
- ❖ I am an actively joined Life member in the **Computer Society of India (CSI)** at the National Level and State Levels to organize various National and State level as well as Ahmedabad chapter level all student activities for the benefit of the students as well as for the CSI.
- ❖ I have organized various seminars, Guest lectures, and workshops in the last 8 years of my academic experience for students.
- ❖ I have been nominated as a **Managing Committee member** in CSI for 2 years, from 2011-2013.
- ❖ I have been nominated as a **Placement Coordinator** for better placement and employment for the students, and have been working in this post for the last 5 years.

◆ Statement of Teaching Interest: -

- ❖ I have a strong passion for teaching complex subjects like Analytical and Logical reasoning, as they empower students to sharpen their analytical skills and critical thinking. This foundation is essential for fostering innovative R&D work, especially in the development of cutting-edge software applications.
- ❖ I wish for High involvement in organizing various Activities like Guest Lectures, Seminars, workshops, and Training sessions on current and upcoming technologies for the benefit of the students.
- ❖ I am eager to work with highly engaged students, motivating them at various levels based on their individual needs and situations, ensuring they reach their full potential in all key areas.
- ❖ I would like to teach the subjects: Software Testing, Software Estimation, Software Engineering, Software Project Management, Object-Oriented Analysis & Design, Database Management System, Data Mining and Warehousing, Big Data Analysis, Programming Languages, and Operating Systems.

◆ Seminar, Workshop, Training, Conference attended, Research Projects & Publication: -

Training:

- ❖ I provided Training on **"Software Modelling Languages: UML & AADL"** to students at various universities in Saudi Arabia on 31 October 2020.
- ❖ Attended the training **"Predictive Analytics Modeler-2020"** organized by Saudi Electronic University, delivered by **IBM** from 10th May to 21st May 2020.
- ❖ Attended the training **"Artificial Intelligence Analyst-2020"** organized by Saudi Electronic University, delivered by **IBM** from 29th June to 16th July 2020.
- ❖ Attended the training **"HCIA-Cloud Computing"** organized by Saudi Electronic University, delivered by **Huawei** from 19th August to 09th September 2020.
- ❖ Attended the training **"HCIA-Big Data"** organized by Saudi Electronic University, delivered by **Huawei** from 20th August to 10th September 2020.
- ❖ Attended the training **"HCIA-Artificial Intelligence"** organized by Saudi Electronic University, delivered by **Huawei** from 21st August to 11th September 2020.
- ❖ Attended the training **"Introduction to Data Mining with Weka"** organized by Saudi Electronic University from 01 - 02 July 2020.
- ❖ Attended the training **"Ethical Hacking"** organized by Saudi Electronic University from 17th September to 10th October 2020.
- ❖ Attended the training **"Introduction to Programming the Internet of Things (IoT)"** organized by the Saudi Electronic University from 05 – 06th November 2020.
- ❖ Attended the training **"IEEE Information Base"** organized by Saudi Electronic University on 09th November 2020.
- ❖ Attended the training **"STTP on Software Engineering – Testing Methodologies"** using IBM Rational Robot Testing tool at DA-IICT, Gandhinagar, Jointly Organized by IEEE and IBM for Gujarat Software Engineering Faculties from 6th to 7th April 2007.

Workshop:

- ❖ Three days **"Cell BE Solutions Development Workshop"** at IIT-Bombay, jointly organized by eOutreach program supported by TIFAC under the MissionReach initiative of the Technology Vision 2020, KReSIT, and IBM on 20-22nd- March 2007.
- ❖ One-day **"Workshop on Project Management"** at AES Institute of Computer Studies, Ahmedabad on 21st January 2012.
- ❖ One-day **"Workshop on How to Write a Research Paper"** at the National Institute of Co-Operative Management Group of Institutions, Gandhinagar, on 7th May 2012.
- ❖ Three days **"Workshop on Desktop publication using Photoshop and CorelDraw"** at GLS Institute of Computer Application, Ahmedabad by CSI-Region-III from 25th April to 27th April 2013.
- ❖ Two days **"Workshop on Open-Source Animation Tool-SYNFIG"** at GLS Institute of Computer Application, Ahmedabad by CSI-Region-III from 2nd May to 3rd May 2013.
- ❖ Two-day **"Workshop on Website Frameworks: Joomla and Ruby on Rails"** at GLS Institute of Computer Application, Ahmedabad, by CSI-Region-III from 25th October to 26th October 2013.

Conference:

- 1) International Conference on **"Mobile, Ubiquitous, and Pervasive Computing"** at VIT (Vellore Institute of Technology) University, Tamilnadu, which was sponsored by HCL, IBM, TCS, Lenovo, Satyam, and HP on 18 – 19th December 2006.
- 2) National Conference on **"Computing for Nation Development"** at BVICAM (Bharati Vidyapeeth's Institute of Computer Application & Management) sponsored by AICTE (All India Council for Technical Education), New Delhi on 23rd – 24th Feb 2007.
- 3) The **1st National Computing College Conference** at King Abdul Aziz University, Department of Computer Science, Jeddah, Saudi Arabia on **17th – 18th Feb 2016**.

Seminar:

- 1) **"Software Engineering Methodologies & Tools"** at Hem. North Gujarat University, Patan, jointly organized by the CSI-Ahmedabad chapter and HNGU on 16 – 17th Feb 2007.
- 2) **"Instructional Seminar on Mathematical Modeling with a Special Emphasis on Industrial Mathematics"** at Department of Mathematics, HNGU, Patan, jointly organized by M.S. University, Baroda, and HNGU on 20 – 22nd, march-2005.

Research Projects:

- 1) **Project Title:** Application of Architecture-centric Virtual Integration to Internet of Things (IoT) Systems.
Project Number: 9460-CAI-2022-1-202301-1
Institution/Organization: Saudi Electronic University
Duration: [21/05/2023] – [17/07/2024]
Role: Co-Principal Investigator
Description:
 - **IoMT Focus:** The Internet of Medical Things (IoMT) involves medical devices that require regulatory approval to ensure patient safety.
 - **Proposed Approach:** A systematic approach is proposed, leveraging:
 - ✓ Architecture Analysis & Design Language (AADL)
 - ✓ Behavior Language for Embedded Systems with Software (BLESS)
 - **Result:** The approach demonstrates effective trusted composition of heterogeneous medical devices over less-assured networks.
 - **Research paper** "Trusted Composition of Internet of Medical Things over Imperfect Networks" published in Future Internet, MDPI (SCIE-Q2) – ISSN No: 1999-5903, Volume-16, Issue-07, **DOI: 10.20944/preprints202405.0908.v1** in **June 2024**.

Publication:

- 1) Research Paper **"Software Sizing & Estimation Techniques"** published at National Conference, BVICAM, New Delhi in **February 2007**.
- 2) Research Paper **"Software Estimation"** published at "XXI- Gujarat Science Congress" at HNGU, Patan, jointly organized by GSA (Gujarat Science Academy) and HNGU, Patan in **March 2007**.
- 3) Research paper **"An Analytic and Parametric Study and Comparison of Software Cost Estimation Models"** published in IJAECSS (International Journal of Advanced Research for Computer Science and Software Engineering) in **September 2012**.
- 4) Research Paper **"Near Field Communication Technology: Communication Mechanism and Threats"** submitted to the International Journal of Emerging Trends in Engineering and Development (IJETED) – ISSN: 2249-6149 in **Feb-March 2015**.
- 4) Research Paper **"A Strategic Approach – Current Trends in Big Data"** submitted to International Journal for Scientific Research & Development (IJSRD) – ISSN: 2321 0613 on **1st January 2017**.
- 5) Research Paper **"The Impact of Blockchain Technology and Machine Learning in Big Data: An Overview"** published in International Journal of Scientific Research in Engineering and Management (IJSREM) – ISSN: 2582-3930 in **April 2020**.
- 6) Research paper "Statistical Analysis of Cyber Security in Business Organizations" published in International Educational Scientific Research Journal - E-ISSN NO: 2455-295X Volume-9, Issue-8 in **August 2023**.
- 7) Research paper "Vehicular Cloud Computing -A New Edge Technology for Roadside Assistance" published in International Educational Applied Research Journal - E-ISSN No: 2456-6713, DOI: <https://doi.org/10.5281/zenodo.8405455>, Volume-07, Issue-10 in **October 2023**.
- 8) Research paper "Force Sensitive Resistors-Based Real-Time Posture Detection System Using Machine Learning Algorithms" published in CMC-Computers, Materials & Continua (CMC) (SCIE-Q3) - ISSN No: 1546-2218, **DOI: 10.32604/cmc.2023.044140**, Volume-77, Issue-02 in **November 2023**.
- 9) Research paper "Designing a Novel Algorithm for Drawing a Kappa Curve Using Bresenham's Approach" published in The Islamic University Journal of Applied Sciences

(JESC) – E-ISSN No: 1658-7944, Volume-05, Issue-02 in **December 2023**.

- 10)** Research paper "Impact of Artificial Intelligence on Cyber Security" published in International Journal for Technological Research in Engineering – ISSN No: 2347 - 4718, Volume-11, Issue-04 in **December 2023**.
- 11)** Research paper "Security in Optical Wireless Communication-Based Vehicular Ad Hoc Networks Using Signature and Certificate Revocation" published in **Journal of Nanoelectronics and Optoelectronics** (SCIE-Q4) – ISSN No: 1555-130X, Volume-19, Issue-01, **DOI: 10.1166/jno.2024.3544** in **January 2024**.
- 12)** Research paper "Design and Implementation for AI Sustainable Smart City Healthcare" published in China Petroleum Processing & Petrochemical Technology Journal (SCIE-Q4)– ISSN No: 1008-6234, Volume-24, Issue-01, pages 74-83 in **January 2024**.
- 13)** Research paper "Distinguished Between Natural Image and Computer-Generated Image Using CNN Algorithm in MATLAB" published in China Petroleum Processing & Petrochemical Technology Journal (SCIE-Q4) – ISSN No: 1008-6234, Volume-24, Issue-01, pages 84-90 in **January 2024**.
- 14)** Research paper "Innovation in Bioinformatics: Recent tools, Database and Involvement of Artificial Intelligence" published in the **INDONESIAN JOURNAL OF MEDICAL CHEMISTRY AND BIOINFORMATICS** – ISSN No: 2963-3818, Volume-2, Issue-02, Article-04, **DOI: 10.7454/ijmcb.v2i2.1026** in **May 2024**.
- 15)** Research paper "Remote Cardiac System Monitoring Using 6G-IoT Communication and Deep Learning" published in Wireless Personal Communications, Springer (SCIE-Q3)– ISSN No: 1572-834X, **DOI: 10.1007/s11277-024-11217-w** in **June 2024**.
- 16)** Research paper "Advancing Cryptographic Security with a New Delannoy-Derived Chaotic S-Box" published in IEEE Access (SCIE-Q2) – ISSN No: 2169-3536, **DOI: 10.1109/ACCESS.2024.3410668** in **June 2024**.
- 17)** Research paper "A Hybrid Feature Selection and Ensemble Stacked Learning Models on Multi-Variant CVD Datasets for Effective Classification" published in IEEE Access (SCIE-Q2) – ISSN No: 2169-3536, **DOI: 10.1109/ACCESS.2024.3412077** in **June 2024**.
- 18)** Research paper "Trusted Composition of Internet of Medical Things over Imperfect Networks" published in Future Internet, MDPI (SCIE-Q2) – ISSN No: 1999-5903, Volume-16, Issue-07, **DOI: 10.20944/preprints202405.0908.v1** in **June 2024**.
- 19)** Research paper "Mechanism for Device Authentication and Session Key Generation in Industrial Internet of Things Networks" published in IEEE Access (SCIE-Q2) – ISSN No: 2169-3536, **DOI: 10.1109/ACCESS.2024.3435688** in **July 2024**.
- 20)** Research paper "ChessCrypt: enhancing wireless communication security in smart cities through dynamically generated S-Box with chess-based nonlinearity" published in Scientific Reports (SCIE-Q1) – ISSN No: 2045-2322, **DOI: 10.1038/s41598-024-77927-0** in **November 2024**.
- 21)** Research paper "Numerical study and optimization of a ferrofluid-filled cavity with thick vertical walls and an elliptical obstacle at the center" published in Journal of Thermal Analysis and Calorimetry (SCIE-Q2) – ISSN No: 1388-6150, Volume 149, pages 15053–15071, **DOI: 10.1007/s10973-024-13723-2** in **December 2024**.
- 22)** Research paper "Utilizing the nth root of numbers for novel random data calculus and its applications in network security and image encryption" published in Expert Systems with Applications (SCIE-Q1) – ISSN No: 0957-4174, Volume 265, **DOI: 10.1016/j.eswa.2024.125992** in **March 2025**.
- 23)** Research paper "Unveiling the impact of temperature dependency and activation energy applications on bioconvective flow of Burgers nanofluid with higher order slip effects" published in Colloid and Polymer Science (SCIE-Q3) – ISSN No: 0303-402X, Volume 303, pages 1113–1122, **DOI: 10.1007/s00396-024-05364-6** in **March 2025**.
- 24)** Research paper "A novel pythonic paradigm for image encryption using axis-aligned bounding boxes" published in Scientific Reports (SCIE-Q1) – ISSN No: 2045-2322, Volume 15, Issue 1, **DOI: 10.1038/s41598-025-89397-z** in **May 2025**.
- 25)** Research paper "Where octagonal geometry meets chaos: A new S-Box for advanced cryptographic systems" published in PloS One (SCIE-Q2) – ISSN No: 1932-6203, Volume 20, Issue 06, **DOI: 10.1371/journal.pone.0320457** in **June 2025**.

- 26) Research paper "Unveiling a novel S-Box strategy: The dynamic 3D scrambling approach" published in PloS One (SCIE-Q2) – ISSN No: 1932-6203, Volume 20, Issue 09, **DOI: 10.1371/journal.pone.0329024** in **September 2025**.
- 27) Research paper "Optimizing LSTM for Sediment Load Prediction in the Swat River Basin, Pakistan: Evaluation of Optimizers and Activation Functions" published in Physics and Chemistry of the Earth (SCIE-Q1) – ISSN No: 1474-7065, Volume 140, **DOI:10.1016/j.pce.2025.104019** in **October 2025**.
- 28) Book Published "Cyber Physical Systems", Kiwi International Publishing House, Madurai, India, 298 pp. **ISBN: 978-93-49818-44-6** in December 2025.
- 29) Patent Published "Cybersecurity Threat Detection and Intrusion Monitoring Device", GB **Patent No. 6493365**. United Kingdom Intellectual Property Office in December 2025.
- 30) Research paper "Secure Ultra-Low Latency Data Paths: A Hybrid Architecture for High-Speed Networking under Adversarial Conditions" published in International Journal of Advanced Computer Science and Applications (IJACSA) (Scopus-Q3) – ISSN No: 2156-5570, Volume 17, Issue-02, **DOI: 10.14569/IJACSA.2026.0170247** in **February 2026**.
- 31) Research paper "Mapping Research Trends in Generative Artificial Intelligence: A Bibliometric and Network Analysis" published in Islamic University Journal of Applied Sciences (IUJAS) (KSA National Journal) – ISSN No: 1658-7936, Volume 03, Issue-01, **DOI: 10.63070/jesc.2026.016** in **March 2026**.
- 32) Research paper "Enhancing Cybersecurity in IoT-Based Maternal Health Monitoring Systems Using Machine Learning Algorithms" published in Islamic University Journal of Applied Sciences (IUJAS) (KSA National Journal) – ISSN No: 1658-7936, Volume 03, Issue-01, **DOI: 10.63070/jesc.2026.018** in **March 2026**.

Honors:

- ❖ Received "**Predictive-Analytics-Modeler-2020-Mastery-award**" issued by **IBM** on 09th May-2020.
- ❖ Received "**Predictive-Analytics-Modeler-2020-Explorer-award**" issued by **IBM** on 09th May-2020.
- ❖ Received "**Artificial-Intelligence-analyst-2020-Mastery-award**" issued by **IBM** on 29th June-2020.
- ❖ Received "**Artificial-Intelligence-analyst-2020-Explorer-award**" issued by **IBM** on 29th June-2020.
- ❖ Received the award "**How to Build Chatbot**" issued by **IBM Developer Skills Network** on 13th July 2020.
- ❖ Got Second Rank in Presentation at XXI-Gujarat Science Congress conducted in HNGU, Patan by GSA on 11th March 2007.
- ❖ Honored with a certificate to recognize the generous contribution as a Managing Committee member in the Computer Society of India, Ahmedabad Chapter during the years 2011-12 and 2012-13.
- ❖ Honored with the Two Silver Medals at the annual function of "**Vohra Youth Organization**" to be the first Ph.D. student in 13 Vohra Communities at visnagar, Mehsana, Gujarat, INDIA on 12th January 2014.

◆ Educational Qualification: -

Course	College	Board/University	Year	Percentage	Class
Ph. D.	Department of Computer Science, Patan	Hemchandracharya North Gujarat Uni. Patan, Gujarat, INDIA	Dec 2013	Done	Done
M. C. A.	GLSICT	Gujarat University, Ahmedabad, Gujarat, INDIA	June 2003	68%	First
B.Sc. Maths	M. N. College, Visnagar	Hemchandracharya North Gujarat Uni. Patan, Gujarat, INDIA	March April 1999	72%	Distinction

Ph.D. Title: Software Estimation Models: Study, Analysis, Comparison, Guidelines, and Proposing a Model for a given requirement of the Software.

◆ Personal Information: -

- ❖ **Father's Name:** Mr. Samsuddin N. Banga
- ❖ **Birth Date:** 28 February 1978
- ❖ **Age:** 47 Years
- ❖ **Gender:** Male
- ❖ **Marital Status:** Married
- ❖ **Nationality:** Indian
- ❖ **Languages Known:** English, Hindi, Gujarati, Urdu.
- ❖ **Hobbies:** R&D Work, Reading, Social Activities, Attending Seminars & Conferences.

◆ References: -

- ❖ **Dr. A. R. Patel**
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- ❖ **Dr. Harshal Arolkar**
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- ❖ **Dr. Nilesh Modi**
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