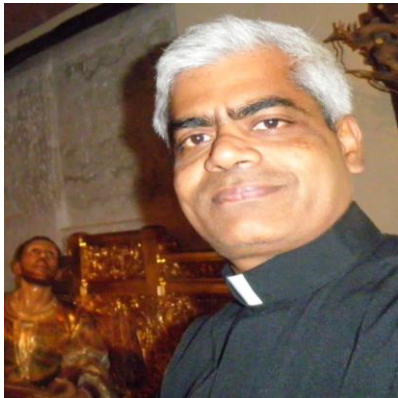


# CURRICULUM VITAE

<b>Name</b>	<b>Fr. Dr. John Rose, S.J., PhD</b>		
<b>Qualification</b>	<p>M.Sc., in Physics, Madras University [Loyola College (Autonomous), Chennai]</p> <p>MS in Computer Engineering, School of Engineering, Santa Clara University, CA, USA.</p> <p>Ph.D. from the School of Engineering, Santa Clara University, CA, USA.</p>		
<b>Total Teaching Experience</b>	15 years.		
<b>Email Id</b>	<a href="mailto:johnrose@xavier.ac.in">johnrose@xavier.ac.in</a>		
<b>Designation</b>	Director & Professor in IT since June 2018 & June 2023 respectively.		Xavier Institute of Engineering, Mahim West, Mahim Causeway Mumbai – 400 016, Maharashtra.  Ph: 91 - 9833627714
<b>Specialization &amp; Areas of Interest:</b>	<ul style="list-style-type: none"> <li>• Computer Networks</li> <li>• Embedded Systems</li> <li>• TIGBT (Trench Insulated Gate Bipolar Transistor)</li> <li>• Thermodynamic Methodology</li> <li>• Deep Learning</li> </ul>		<ul style="list-style-type: none"> <li>• Micro Processor and Micro Controllers</li> <li>• Power Devices</li> <li>• Device Modeling</li> <li>• Variational</li> <li>• IoE</li> </ul>
<b>Subjects Taught at Xavier Institute of Engineering under Mumbai University</b>	<ul style="list-style-type: none"> <li>• Green IT (BE-IT) from January 2022 to Present</li> <li>• Internet of Everything (IoE) (BE-IT) from January 2020 to Present</li> <li>• Principle of Communications (SE-IT) from June 2018 to 2022</li> <li>• Human Machine Interaction (BE-Comps) from 2015 to 2019</li> <li>• Micro Controller and Embedded Systems (TE-IT) from 2015 to 2018</li> <li>• Electron Devices Laboratory, Santa Clara University, from 2009-2015</li> <li>• Computer Networks (TE-Comps &amp; BE Comps) from 2006-2009</li> <li>• Introduction to Operating Systems (BE Comps &amp; BE IT) from 2006-09</li> </ul>		
<b>PhD Thesis</b>	Modeling of Internal Electric Fields using the Variational Thermodynamic Methodology and Investigation of Gate-Emitter Breakdown Characteristics of Trench Insulated Gate Bipolar Power Transistor		
<b>MS / ME Thesis</b>	Integrated Home Server (IHS)		
<b>A. IEEE Transactions:</b>			
1	<b>John Rose Santiago</b> , Krunal V. Patel, Md A Sattar, Norman G. Gunther and Mahmudur Rahman, “Modeling and Experimental Verification of TIGBT Detailed Internal Electric Fields which Lead to Breakdown,” <i>IEEE Trans. On Electron Devices, IEEE Transactions on Electron Devices</i> , vol. 62, No. 8, pp. 2542-2548, August 2015.		
<b>B. EAI Journal Publications</b>			
1	<b>Santiago, John Rose.</b> , Samuel, S. J., & Sawn, R. (2015). Modified Virtual Air Guitar: A Concept Realized using Image Processing Techniques. <i>EAI Endorsed Trans. Context-aware Syst. &amp; Appl.</i> , 2(3), e2. [In Proceedings of the 3 <sup>rd</sup>		

	<i>International Conference on Context-Aware Systems and Applications, (DUBAI, United Arab Emirates — October 07 – 09, 2014), ACM, 75 – 79].</i>
<b>C. SCOPUS Indexed Journals/ Book Chapters/ Workshops/ Conferences</b>	
1	Stella J, Karthikeyan P, Thomas Schwarz, S.J., <b>John Rose, S.J.</b> ” Steganalysis on data embedded medical image”, In <i>Journal of Discrete Mathematical Sciences and Cryptography</i> , 2023, 26(3), pp. 767–777 [https://doi.org/10.47974/JDMSC-1753]
2	Swamidas, J., & <b>John Rose.</b> , Chopra, S., Paul, S. N., Joshi, K., Panda, S., ... & Agarwal, J. P. (2021). Implementation of a visual feedback system for motion management during radiation therapy. <i>Journal of Cancer Research and Therapeutics</i> , 17(1), 148. Volume XX - Issue XX - Month 2019, Published by Wolters Kluwer – Medknow. https://www.cancerjournal.net/temp/JCanResTher000-1548622_041806.pdf
3	Arockia David Roy Kulandai, John Rose and Thomas Schwarz, Gray Counters for non-volatile memories – Memories, Devices, Circuits and Systems (2022), [DOI:https://doi.org/10.1016/j.memori.2022.100014] Reference: MEMORI 100014. Published by <b>Elsevier</b> , Sep. 17, 2022.
4	<b>John Rose Santiago</b> , Krunal V. Patel, Md A Sattar, Norman G. Gunther and Mahmudur Rahman, “Modeling and Experimental Verification of TIGBT Detailed Internal Electric Fields which Lead to Breakdown,” <i>IEEE Trans. On Electron Devices, IEEE Transactions on Electron Devices</i> , vol. 62, No. 8, pp. 2542-2548, August 2015
5	<b>Santiago, John Rose.</b> , Samuel, S. J., & Sawn, R. (2015). Modified Virtual Air Guitar: A Concept Realized using Image Processing Techniques. <i>EAI Endorsed Trans. Context-aware Syst. &amp; Appl.</i> , 2(3), e2
6	Arockia David Roy Kulandai SJ, Stella J, Jehan-Francois Pa`ris, <b>John Santiago Rose, SJ.</b> , Thomas Schwarz SJ. (2021). “Needles in a Haystack: How pooling can limit error rates in tests,” <i>WS01 IEEE ICC 2021 Workshop on COVI-COM: Communication, IoT and AI Technologies to counter COVID-19 – IEEE ICC 2021 Workshop.</i> [DOI: <a href="https://doi.org/10.1109/ICCWorkshops50388.2021.9473730">10.1109/ICCWorkshops50388.2021.9473730</a> ]
7	Kulandai, A. D. R., Stella, J., <b>John Rose.</b> , & Schwarz, T. (2020, November). Balanced Gray Codes for Reduction of Bit-Flips in Phase Change Memories. In <i>Symposium on Modelling, Analysis, and Simulation of Computer and Telecommunication Systems</i> , <b>Springer</b> , Cham, (pp. 159-171). [https://doi.org/10.1007/978-3-030-68110-4_11]
8	Schwarz, S. T., & <b>John Rose.</b> , (2020, April). Combinatorial and Rectangular Layouts as Building Blocks for Local Reconstruction Codes. In <i>2020 3rd International Conference on Communication System, Computing and IT Applications (CSCITA)</i> , IEEE, (pp. 7-12). [DOI: <a href="https://doi.org/10.1109/CSCITA47329.2020.9137775">10.1109/CSCITA47329.2020.9137775</a> ]
9	<b>John Rose.</b> , Gunther, N., Sattar, M. A., & Rahman, M. (2017, April). A variational thermodynamic methodology applied to model critical smart grid electronic devices. In <i>2017 2nd International Conference on Communication Systems, Computing and IT Applications (CSCITA)</i> , IEEE, (pp. 116-120). [DOI: <a href="https://doi.org/10.1109/CSCITA.2017.8066536">10.1109/CSCITA.2017.8066536</a> ]

10	Schwarz, S. T., Amer, A., & <b>John Rose.</b> , (2017, April). RESAR: Reliable Storage at Exabyte Scale Reconsidered. In <i>2017 2nd International Conference on Communication Systems, Computing and IT Applications (CSCITA)</i> , IEEE, (pp. 84-89). [DOI: 10.1109/CSCITA.2017.8066529]
11	Jeswani, J., <b>John Rose.</b> , & Schwarz, T. (2017, April). Using algebraic signatures to compress built-in self-test on a chip. In <i>2017 2nd International Conference on Communication Systems, Computing and IT Applications (CSCITA)</i> , IEEE, (pp. 95-100). [DOI: 10.119/0CSCITA.2017.8066531]
12	Beatrice S, Stella J, <b>John Rose SJ</b> , “Cerebral Palsy Detection using Vision Impairment and Machine Learning”. <i>CRC Press, Taylor &amp; Francis Group</i> , 2024 ( <b>Paper Accepted</b> )
13	Mayuri Gad, Atul Bhaskar, <b>John Rose SJ</b> , Khyati Gupta, Chasanal Rathod, Rohan Kothurkar “3-D Gait Analysis of children with treated idiopathic clubfeet following completion of Ponseti method of treatment” in <i>Gait and Posture, Springer 2023</i> ( <b>Paper Submitted</b> )
14	Stella J, Dharmaraj Stalin, Aditi Pathare & <b>John Rose SJ</b> , “Automatic Fruit and Vegetable Recognition for Finding Real-Time Supremacy” in <i>Iran Journal of Computer Science, 2024</i> ( <b>Paper Submitted</b> )
15	<b>John Rose SJ</b> , Stella J, Thomas Schwarz & Jaya Jeswani “Galois Twister: Algebraic Signatures for Compression of Test Results in Built-In Self-Test” in <i>Kuwait Journal of Science, Elsevier</i> , 2024 ( <b>Paper Submitted</b> )
<b>D. IEEE and EAI Conferences and Publications</b>	
1	<b>Santiago, John Rose.</b> , Patel, K. V., Gunther, N. G., & Rahman, M. (2015, March). Modeling of detailed internal electric field in a Trench Insulated Gate Bipolar Transistor using variational thermodynamic methodology. In <i>2015 China Semiconductor Technology International Conference (CSTIC)</i> , IEEE, (pp. 1-3).
2	<b>John Rose Santiago*</b> , Krunal V. Patel, Norman G. Gunther and Mahmudur Rahman, “Modeling of Detailed Internal Electric Field in a Trench Insulated Gate Bipolar Transistor Using Variational Thermodynamic Methodology,” presented at the SIGMA XI – The Scientific Research Society Poster Session, Santa Clara, April 22, 2015.
3	<b>Santiago, John Rose.</b> , Patel, K. V., Sattar, M. A., Gunther, N. G., & Rahman, M. (2014, April). Variational thermodynamic and Finite Element analysis models of the Metal-Oxide-Semiconductor Capacitor. In <i>2014 International Conference on Circuits, Systems, Communication and Information Technology Applications (CSCITA)</i> , IEEE, (pp. 168-172).
4	Swamidas, J., & <b>John Rose.</b> , Chopra, S., Paul, S. N., Joshi, K., Panda, S., ... & Agarwal, J. P. (2021). Implementation of a visual feedback system for motion management during radiation therapy. <i>Journal of Cancer Research and Therapeutics</i> , 17(1), 148. Volume XX - Issue XX - Month 2019, Published by Wolters Kluwer – Medknow. <a href="https://www.cancerjournal.net/temp/JCanResTher000-1548622_041806.pdf">https://www.cancerjournal.net/temp/JCanResTher000-1548622_041806.pdf</a>
5	Arockia David Roy Kulandai, John Rose and Thomas Schwarz, Gray Counters for non-volatile memories – <i>Memories, Devices, Circuits and Systems</i> (2022), [DOI: <a href="https://doi.org/10.1016/j.memori.2022.100014">https://doi.org/10.1016/j.memori.2022.100014</a> ] Reference: MEMORI 100014. Published by Elsevier, Sep. 17, 2022.

<b>E. Books Published</b>	
1	Thomas Schwarz, B. Thirumalai, Jaychand Upadyay, Nisarg Vyas, John Rose Santiago, "Joy of Python", a Text Book for High School School Students, Published by St. Paul's Press, 2022.
<b>F. Reviewer: IEEE Letters of the Computer Society</b>	
1	<b>Reviewed Papers:</b> <ul style="list-style-type: none"> <li>Bowlyn, K., &amp; Hounsinou, S. (2020). MUDACO-2: An Improved Distributed Multiplier-Less Approach for Radix-2 FFT. <i>IEEE Letters of the Computer Society</i>, 3(2), 54-57.</li> </ul>
<b>G. Sponsored Research Projects – Grants Received</b>	
1	Received a grant of Rs. 1.5 Cr from OREC, Marquette University, Milwaukee, USA, for executing Gait Lab
2	This project was done at Tata Memorial Hospital, (ACTREC), Karghar, Navi Mumbai, and execute "Implementation of a Visual Feedback System for Motion Management during Radiation Therapy" to benefit cancer patients. The cost of the project was 3 lakhs and the special instrument was used was iTVGoggles, December 2017. Project Cost: Rs. 53,000/
3	St. Xavier's Gait Lab – A Project to do the Gait Analysis of Children affected by Cerebral Palsy – 2018. Total cost exceeds 2 Cr.
4	Cyber Range Solutions Institute @Xavier's – A project to train Engineers to become Cyber Warriors to protect the Country – 2020
5	Xavier Centre for Advanced Learning – To train engineers to be experts in IoT, AI and Deep Learning - 2019
<b>H. Research Projects in Medical Field</b>	
1	Implemented of a visual feedback system for motion management during radiation therapy. Installed an iTV goggles at ACTREC, Tata Hospital, Kharghar, March 2019. Rs. 58,000/
2	Implemented of a visual feedback system for motion management during radiation therapy. Installed an iTV goggles at Tata Hospital, Parel, Mumbai, January 2022. Rs. 5 lakhs. (Sponsored by XIE).
3	Founder, St. Xavier's Gait Lab with the Collaboration of OREC, Marquette University, WI, USA, to serve children with cerebral palsy and neuro-muscular disorders. \$20000 USD.
4	Presented a paper on Gait Lab to the participants of IAJES (International Association of Jesuit Engineering Schools) at Javeriana University, Bogota and Cali, Colombia, on 14-19, July 2019.
<b>I. Teachers / Students Training Programs</b>	
1	Attended <b>the Economic Times New Age Education Symposium 2020</b> conducted by The Economic Times, Mumbai, at Sahara Star Hotel, from Feb. 25-26, 2020.
2	Attended a training program at Shriner's Hospital, Chicago, and OREC, Marquette University, Milwaukee, WI, USA, on Gait Lab from Dec. 4-10, 2018. Established St. Xavier's Gait Lab at XIE and inaugurated on 11 <sup>th</sup> of March 2019.
3	Conducted an Exemplary Career Guidance Program for the students of Mohammad Sadhak Engineering College, Kilakarai, on 30 <sup>th</sup> July 2018, Tamil Nadu.
4	Two hours sessions conducted for the students of Don Bosco Institute of Technology, Kurla, on "Deep Learning and Human Machine Interactions" on 10 <sup>th</sup>

	January 2019.
5	Two hours sessions conducted for the students of St. Francis Institute of Technology, Borivli, on “Deep Learning and Human Machine Interactions” on 17 <sup>th</sup> January 2019.
6	Conducted Teacher Training Programs for the teachers of St. John International School, on November 16, 2016, Palghar, Palghar Dt.
7	Conducted Teacher Training Programs for the teachers of St. Anne’s High School and Junior College, on October 26, 2016, Vasai West, Thane Dt.

#### J. Workshop Conducted

1	Workshop conducted on “Micro Controllers and Robotics” for the faculty of Andhra Loyola Institute of Engineering and Technology, August 16-17, 2011.
2	Workshop conducted on “Open Source Operating System (LINUX)” for the faculty of Don Bosco Institute of Technology, Kurla, August 6-7, 2011.
3	Workshop conducted on “Micro Controllers and Robotics” for the faculty of Arulanandar College, Karumathur, Madurai, November 26-27, 2011.
4	Workshop conducted on “Robotics” for the faculty of St. John Engineering College and Technology, Palghar, July 16-17, 2015.

#### K. Keynote Address

1	Keynote Address given on Feb. 26, 2018, at St. Xavier’s College, Ahmedabad, Gujarat, on Deep Learning for Computer Vision.
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#### L. Engineering and Environment as Mission

1	Established “Xavier Center of Excellence” with the collaboration of Microchips in March 2020 to train the engineers in IoE.
2	Established “Xavier Center for Advanced Learning” with the collaboration of Alternative Learning Systems in January 2020 to train graduates in Civil Services in order to stop “brain drain”.
3	Founder, St. Xavier’s Gait Lab, with the collaboration of Orthopaedic Rehabilitation Engineering Center, Marquette University, Milwaukee, WI, USA, to do the gait analysis of children affected by club footing and cerebral palsy. This is the only lab located in an Engineering College in India.
4	<b>Founder of X-RAY (Xavier-Raheja Awakening Youth), A step Towards ‘Clean &amp; Healthy India’. A helping Hand towards the national campaign “Swachh Bharat Abhiyan”, January 2019.</b>
5	<b>John Rose Santiago, Neha Kumar Sampat, “Reduce the Transmitted Power or Remove the Cell Tower”, presented the paper at the International Jesuit Conference held in Bilbao, Spain, July 6, 2018.</b>
6	<b>Founder of Xavier Linux Research Lab (XLRL) – for open source and free software. Published a DVD containing all the software pertaining to Computers and IT syllabus of Mumbai University. The DVD was named as LAMP+, January 2008.</b>

#### M. Languages (including Indian) that I can read, write or speak

	<b>Name of languages</b>	<b>Read, Write &amp; Speak</b>
	English	Read, Write & Speak
	Marathi	Read and Write
	Tamil	Read, Write & Speak
	Gujarati	Read, Write & Speak
	Hindi	Read, & Speak

**N. Experience of guiding research students at BE level**

- I have guided BE students in their final year projects on
- Home Automation
  - Home Servers
  - Portable Cloud Server
  - Modeling of TIGBT
  - Vehicle for the Physically Challenged to climb stairs.
  - Library Management using RFIT.
  - Affordable Security Systems for Small Homes.
  - Modeling of Power Devices - Diode, BJT, MOSFET, IGBT, TIGBT
  - Internet of Everything.

**O. Qualification Details**

Sr. No	College/Institute	University/ Board	Exam Degree/Diploma passes	Month /year of passing	Field of specialization	Percentage of marks
1	Santa Clara University	Santa Clara University	PhD	June 2015	High Power Devices - Breakdown Voltage	GPA: 3.709/4.0
2	Santa Clara University	Santa Clara University	MS	June 2011	Computer Networks	GPA: 3.658/4.0
3	Loyola College	Madras University	M.Sc	June 1994	Physics with 3 papers in Electronics	79% Distinction

**P. Work Experience**

Sr. No.	Name of Employer	Post held	Nature of duties/work	Date of joining	Date of leaving
1	Chairman of Xavier Institute of Engineering	Director + Teaching Faculty in Information Technology	Teaching Microcontrollers and Embedded Systems, Network Mgmt, & + Management, Principle of Communication	June, 2018	Continuing
2	Chairman of Xavier Institute of Engineering	Director, Shilpalaya Technical Institute	Visioning and Managing	June 2020	Continuing
2	Director, Xavier Institute Of Engineering	Associate Professor + Administrator	Taught in IT dept, General Administration	Aug. 2015 -2018	June 2018
3	Department of Electrical and Electronics Engineering	Research Assistant and Teaching Assistant	Doing research on Power Devices using Variational	May 2012	July 2015

			Thermodynamic Methodology in Electron Devices Laboratory, USA.		
4	Director, XIE.	Assistant Professor	Robotics and Networks	Aug. 2011	April 2012
5	Director, Xavier Institute Of Engineering	Lecturer	Subject taught was robotics Coordinator: Xavier Linux Research Lab	Aug. 2006	Aug. 2011

**Q. Member professional body/institution.**

- Member of IEEE since 2009, SIGMA Xi Scientific Research Society.
- Governing Body / Council of Xavier Institute of Engineering
- Member of Editorial Board, WHIOCE PUBLISHING PTE. LTE.
- Member, Governing Board, St. Xavier's College, Fort, Mumbai
- Member, Governing Board, Boys Academy, Churchgate, Mumbai
- Member, Governing Board, St. Xavier's B.Ed College, Churchgate, Mumbai.
- Coordinator, Jesuit Higher education, Mumbai Jesuit Province, Mumbai
- Advisory board IEEE-CSCITA 2014, 2017 and 2020 conferences, SFIT, Mumbai.
- Member, Governing Board, Champion School, Fort, Mumbai – from 2020
- Coordinator of Higher Education for the Bombay Jesuit Province since 2017.

**R. Help rendered to department/institute administration in organizations /institutions in which I worked.**

- Staff Evaluation system at Santa Clara University
- Staff Evaluation system at XIE
- Conducting workshops – VLSI and Cloud Computing (most recent)
- Started XAVIER LINUX RESEARCH LAB and Co-ordinated activities and compiled all the Engineering Software into one DVD and circulated to all the Engineering Colleges in Mumbai.
- Created Moodle Server at XIE, Andhra Loyola and Schools in Gujarat.

**S. Travel outside India and purpose of the visit.**

S. No	Country & Place visited	Purpose of visit	Year
1	Burkina Faso, Ouagadougou (Wagadugu), KOJUS, Jesuit University	International Conference	May 2023
2	USA, Boston, Boston College	International Conference	July 2022
3	Bogota, Colombia, Javeriana University	Engineering Conference	July 2019
4	Cali, Colombia, Javeriana University	Engineering Conference	July 2019
5	Spain, Bilbao, Deusto University	IAJES Conference	June 2019
6	Yogyakarta, Indonesia, Uni. of Sanatana Dharma	Exchange Programs	December 2018
7	Milwaukee, USA	Exchange Programs	December 2018
8	Bilbao, Spain, Deusto University	Exchange Programs and Conference	July 2018

9	Milwaukee, Marquette University, USA	Exchange Programs	July 2017
10	Santa Clara, USA	Masters and PhD	2009-2015
11	Santa Clara, USA	Research at Electron Device Lab	2009
12	Shaighai, China	Presented a paper, (CSTIC)	March 2015
13	Japan, Tokyo, Tokyo Institute of Technology	Presented a paper	April 2015
14	Mexico	Immersion Trip	May 2015
15	UCA	El Salvador Exchange programs	April 2015
16	St. Justin, Switzerland	Exchange programs	July 2015
17	Israel	Exchange programs	July 2015
18	France, Spain, ICAM	Exchange programs	June 2011
19	Italy	Exchange programs	June 2011
20	Sri Lanka	Training	Aug. 2008

#### **T. Additional Qualifications**

- B.Ed (Science Education) – from Annamalai University
- B.Ph (Philosophy) – Sacred Heart College, (Madras) Chennai, Tamil Nadu.
- B.Th (Theology) – Vidyajyothi College, New Delhi.
- Diploma in Software – LIBA, Loyola, (Madras) Chennai, Tamil Nadu.
- Post Graduate Diploma in Computer Hardware Engineering – ACCEL Automation Pvt. Ltd.
- ICIM Fujitsu – 6 months Internship

#### **U. Additional Responsibilities**

- Province Development Officer, Solar Power Installation, from 2021-2023
- Governing Board Member of Campion School, Fort, Mumbai – 400 001.
- Governing Board Member of St. Xavier's College, Fort, Mumbai – 400 001
- Governing Board Member of St. Xavier's Institute of Education, Churchgate, Mumbai
- Governing Board Member of St. Xavier's Boys Academy, Churchgate, Mumbai – 400 001
- Coordinator for Higher Education for Bombay Jesuit Province since 2016.
- Director, Shilpalaya Technical Institute, Andheri East, Mumbai, since May 2020.
- Director of St. Xavier's Technical Institute, Mahim, Mumbai, since June 2018.
- Member of IAJES (International Association of Jesuit Engineering Schools).

#### **V. References**

1. Dr. Y. D. Venkatesh, PhD., Principal, Xavier Institute of Engineering, Mahim, Mumbai, 400 016
2. Dr. Arun de Souza, PhD, Professor, Sociology Department, St. Xavier's College, Mumbai – 400 001

Date: December 20, 2023

Place: Xavier Institute of Engineering

Mumbai – 400 001