Name: Dr. Maria Joseph Israel, S.J.

Designation: HoD and Assistant Professor

Qualifications: Ph.D. in CSE

Email ID: maria.joseph@sxuk.edu.in

Biographical Sketch

Dr. Maria Joseph Israel, S.J., holds a PhD in Computer Science and Engineering from Santa Clara University, California, USA, where he also taught Computer Science and Engineering, and led research projects on AI, knowledge engineering, system storage technology, and AI Ethics. His research addresses the question of what it takes to digitally verify a digital artifact and the issues of trust and authenticity in the context of an AI-enhanced infosphere. Furthermore, his current research aims to directly assess the social impact of computing technology in the society and particularly data and automation technologies like AI. He has published his research works in reputed international journals and conferences, and received best paper awards for some of his research publications.

Currently he is an assistant professor of Computer Science at St. Xavier's University, Kolkata, while also being a visiting professor and research scholar at Santa Clara University, USA. He is an AI and Faith expert and a Fellow at AI and Faith organization, USA. He also assists Jesuit Worldwide Learning (JWL) organization as a technical expert in offering online higher education to students across South Asia, Africa and Latin America.

He has several years of administration, teaching, and research experience in higher education and has worked in post-war zone countries in various capacities, offering higher education and welfare services to people at the margins of the society. He taught in local and foreign higher education institutions, and worked with International Aid Agencies and World Bank funded projects. He helped establish several educational institutions including an Institute for Management and Administration. His research interests include: artificial intelligence, knowledge engineering, human-computer interaction, blockchain technologies, social entrepreneurship, technology impact on society, and AI ethics.

Areas of Specialisation and Research

- ❖ Data Provenance
- ❖ Knowledge Engineering
- ❖ Ontology Design and Development
- ❖ Artificial Intelligence
- ❖ Blockchain Technologies,
- ❖ Semantic Web Technologies
- ❖ Computing Ethics

Academic Positions

- ❖ **St. Xavier's University, Department of Computer Science, (July 2023 - Present)**

  - o Head of the department of Computer Science (August 2025 - present)

  - o Assistant Professor at the Department of Computer Science and Engineering both at graduate level

  - o Research Coordination Committee's member (November 2023)

  - o Researcher in various research projects including digital data provenance, Semantic Web, Natural Language Processing (NLP), and Machine Learning (ML)

- ❖ **Jesuit Worldwide Learning (July 2023 - Present)**

  - o Research coordinator for online higher education programs offered to refugees and forcibly displaced persons living in post-war situations

  - o Curriculum developer for applied computer science certificate/diploma programs - data science and digital marketing

- ❖ **Santa Clara University, School of Engineering, Department of Computer Science and Engineering (January 2023 - June 2023)**
  - o Adjunct lecturer at the Department of Computer Science and Engineering both at undergraduate and graduate level
  - o Researcher in various research projects including digital data provenance, Semantic Web, Natural Language Processing (NLP), and Machine Learning (ML)

- ❖ **Santa Clara University, School of Engineering, Department of Computer Science and Engineering (March 2019 - December 2022)**

  - o Research Assistant at the Department of Computer Science and Engineering. Assisting in various research projects including digital data provenance, Semantic Web, Blockchain Technology, Natural Language Processing (NLP), and Machine Learning (ML)

  - o Lead Researcher in the *MetaScriptura* project which dealt with knowledge representation and development of a generic data provenance framework for broader applications.

  - o Student Mentor/Counselor at residence halls of Santa Clara University.

- ❖ **Jesuit Commons: Higher Education at the Margins (JC:HEM) (August 2015 - February 2019)**
  - o International Faculty for Online Higher Education Program from August 2015 - February 2019
    - • Graphic Design for Desktop Publication, Mannar and Vavuniya, Sri Lanka
    - • Computer Science and Applications, Djabal, Chad
- ❖ **St. Xavier's College, Department of Computer Science, Kolkata (2012-2014)**
  - o Assistant Professor, April 2012 - mid August 2014
  - o Team Leader for designing curriculum for "Value Education and Religion Course" which is offered as a two-credit foundation course to all the undergraduate students at St. Xavier's College, Kolkata, from December 2013 onwards.

Administrative Responsibility

- ❖ HoD of Computer Science Department, Faculty of Science, St. Xavier's University, Kolkata (August 2025 – present)

Publications

- ❖ **Book Chapters:**
  1. Israel, M. J. (2025). Leveraging AI to empower young entrepreneurs in higher education (Full paper). *ICSSR*, 1-15. (Pre-print).
- ❖ **Peer-Reviewed Journals:**
  1. Israel, M. J. (2025). Ethical AI by Design: Embedding Human Rights into Algorithms - Introducing the RIGHTS Framework, *St Xaviers University Kolkata Journal of Interdisciplinary Research, (SXUKJIR)*, 1-20. ISSN: 2584-055X. (Pre-Print).
  2. Israel, M. J., & Amer, A. (2023). Rethinking Data Infrastructure and its Ethical Implications in the Face of Automated Content Generation (Full paper). *AI & Ethics* (Springer Nature), 1-15. DOI: 10.1007/s43681-022-00169-1
  3. Israel, M. J., & Amer, A. (2021). Ethical implications of digital infrastructures for pluralistic perspectives. *Ethics and Information Technology* (Springer Nature), *23*(3), 399-417.
  4. Israel, M. J., Graves, M., & Amer, A. (2021). On trusting a cyber librarian: How rethinking underlying data storage infrastructure can mitigate risks of automation. Endorsed Transactions on Creative Technologies (Extended Paper), 8 (29), 1-13, European Alliance for Innovation (EAI), doi: 10.4108/eai.1-12-2021.172359

5. Israel, M. J. (2015). Effectiveness of integrating MOOCs in traditional classrooms for undergraduate students. *The International Review of Research in Open and Distributed Learning*, *16*(5).

❖ **Peer-Reviewed International Conference Papers:**

1. Israel, M. J. (2025). Ethical AI by Design: Embedding Human Rights. In the international conference on Convergence of AI, Human Rights, and IPR. *(SXUKRDC2025),* Kolkata, India, 13-14, June 2025.

2. Israel, M. J. (2025). Leveraging AI to empower young entrepreneurs in higher education. In the ICSSR Sponsored "Entrepreneurship Skills and Mindset among the Youth Studying in Higher Education Institutions (HEIs)" Conference, (*ICSSR*), Kolkata, (India), 11 January, 2025.

3. Saha, S., Israel, M. J & Bhattacharya, M. (2025). Deep Inception: Cotton Leaf Disease Classification with Convolutional Precision Neural Network. CODE AI 2025: 2ⁿᵈ International Conference on Data Science and Exploration in Artificial Intelligence, Manipal Academy of Higher Education, Dubai, UAE. 7-8 April 2025.

4. Shaghaghi, N., Israel, M.J., & Amer, A. (2023, July). Ethics of Autogenerated-Metadata Ownership. IACAP conference 2023, Online. (Prague, Czech Republic), 5-7 July, 2023.

5. Israel, M.J., Qin, A., Zhang, Y., Xin, J., & Shaghaghi, N. (Nov, 2022). Automated generation of Mandarin education multimedia content from existing English content. In the *15th annual International Conference of Education, Research and Innovation* (ICERI2022), Seville (Spain), 7-9 November, 2022.

6. Shaghaghi, N., Israel, M. J., Ghosh, S., Mondal, S., & Biswas, A. M. A. (2021, November). *ClassRoute*: Bridging the Digital Academic-Content Divide. In *2021 1st Conference on Online Teaching for Mobile Education (OT4ME 22-25, November 2021)* (pp. 168-173). IEEE. Online.

7. Israel, M.J., & Amer, A. (2021). *MetaScribe*: Data provenance in scholarly publications. In American Council on Science & Education (CSCE 26-29 July 2021) Conference, Las Vegas, Nevada, USA. ISBN # 1-60132-514-2.

8. Israel, M.J., & Amer, A. (2021, July). Rethinking data infrastructure and its ethical implications in the face of automated content generation.CEPE/IACAP Joint conference 2021 (5-9 July 2021), Online.

9. Israel, M. J., Graves, M., & Amer, A. (2020, December). On trusting a cyber librarian: How rethinking underlying data storage infrastructure can mitigate risks of automation. In the 12th EAI *International Conference on Intelligent Technologies for Interactive Entertainment* (INTETAIN 12-14, December 2020), (pp. 25-42). Springer, Cham. Online. [Best Paper Award]

10. Israel, M. J., Shaghaghi, N., & Amer, A. (2020, December). ToDI: A Taxonomy of Derived Indices. In *International Conference on Intelligent Technologies for Interactive Entertainment* (INTETAIN 12-14, December 2020), (pp. 43-61). Springer, Cham. Online.

11. Israel, M. J., & Nath, B. A. (2013). Integration of Massive Open Online Education (MOOC) System with in-Classroom Interaction and Assessment and Accreditation: An extensive report from a pilot study. In *Proceedings of the international conference on e-learning, e-business, enterprise information systems, and e-Government (EEE)* (p. 105). The Steering Committee of The World Congress in Computer Science, Computer Engineering and Applied Computing (WorldComp, 22-25 July, 2013) Las Vegas, Nevada, USA.

12. Israel, M. J., & Nath, A. (2013). Some issues and challenges in e-learning methodologies and e-assessment systems. In *Proceedings of the International Conference on e-Learning, e-Business, Enterprise Information Systems, and e-Government (EEE)* (p. 140). The Steering Committee of The World Congress in Computer Science, Computer Engineering and Applied Computing (WorldComp, 22-25 July, 2013).

13. Israel, M. J., & Nath, A. (2012). Digital Divide: A comprehensive approach to Integrate State and community experiences into ICT Policy Framework from an Indian perspective. In *2012 World Congress on Information and Communication Technologies,* 30 October – 1 November 2012, (pp. 383-388). IEEE. Trivandrum, India.

Related Professional Experiences

- **Artificial Intelligence and Faith Expert, AI & Faith Organization, USA (September 2023-present)**
  - Artificial intelligence and faith expert and engages in discussion on responsible AI. (In-person, Virtual, Hybrid: https://aiandfaith.org/our-experts/)

- **Conference Publication Chair**
  - IEEE International Symposium on Technology and Society (ISTAS) 2025 Santa Clara, CA, USA, September 10-12 2025, Santa Clara University, Santa Clara, CA, USA

- **Conference Co-Chair (Co-Convenor)**
  - Convergence of AI, Human Rights and IPR, 13-14 June, 2025, St. Xavier's University, Kolkata, India

- **Conference Secretary (2020-2022)**
  - IEEE International Conference on Massive Storage Systems and Technology, Santa Clara University, School of Engineering, Santa Clara, CA, USA (In-person, Virtual, Hybrid)

- **Program Committee Member & Local Conference Organizer (2020-present)**
  - Women Empowerment for a Sustainable Future, 14 January, 2026.
  - IEEE International Symposium on Technology and Society (ISTAS) 2025 Santa Clara, CA, USA, September 10-12 2025, Santa Clara University, Santa Clara, CA, USA.
  - International Association of Computing and Philosophy (IACAP) 2022 Santa Clara, CA, USA, July 22-24 2022, Santa Clara University, Santa Clara, CA, USA (Hybrid).

    o European Alliance for Innovation **(**EAI) INTETAIN 2021 - 13th EAI International Conference on Intelligent Technologies for Interactive Entertainment, Santa Clara, USA, December 12-14, 2020, Santa Clara University (Virtual)

❖ **Reviewer**

➢ **Journals:**

1. Artificial Intelligence Review (AIR) - an international science and engineering journal by Springer (2022 - present)

2. Frontiers in Communication - an international journal in pioneering technology and artificial intelligence (2024 - present)

3. International Review of Research in Open and Distributed Learning (IRRODL), 2015 - present

4. African Educational Research Journal (AERJ), 2015 - present

➢ **Conferences:**

1. IEEE International Symposium on Technology and Society (ISTAS) (2025-present)
2. International Association of Computing and Philosophy (IACAP) (2022 - present)
3. CEPE/IACAP Joint Conferences: The Philosophy and Ethics of Artificial Intelligence (2021 - present)
4. European Alliance for Innovation (EAI) INTETAIN (2020-2021)

❖ **Professional Affiliation:**

➢ **Member:**

1. Professional Member and Secretary of IEEE Society on Social Implications of Technology (IEEE SSIT), Secretary and Member, Santa Clara, CA, USA. (2020-present)
2. Professional Member of Institute of Electrical Electronics Engineers (IEEE). (2017-present)
3. Professional Member of Computer Society of India, Kolkata Chapter. (2025-present)
4. Professional Member and Expert in AI and Faith Organization, USA. (2023-present)

❖ **Symposium**

➢ **Presentation:**

1. Symposium: Presented "Bringing Technology for Teaching and Learning to Africa", at the symposium titled "Engaged Scholarship for Social Justice", with Changying Zheng, on 7 February, 2015 at the University of San Francisco, California, USA.

❖ **Invited Lectures/Talks**

1. **"Ethics and AI: Navigating Responsibility in a Digital Workplace",** in the workshop titled "Engaging with AI: A Technical Introduction to AI Based Applications for Professional Assistance" organized by The Centre for Language and Communication Studies of St. Xavier's University, Kolkata, 3, September 2025.
2. "AI and Religious Law - A Catholic perspective" organized by AI and Faith Organization, 17 April, 2025.
3. "Walking with the Youth in the World of social media, Internet and AI: An Ecclesiological Insight: in SSCC CONFERENCE 2025, Barrackpore, WB, India, 18-20, February 2025.
4. "Tech Horizons: Navigating emerging opportunities in AI and Drone technologies." In Rise and Lead: Young Women Pioneering Technology, Business, Public Life National Seminar by St. Xavier's University, Kolkata, and the Council for Women, the Ministry of Women and Child Welfare, the government of India, Delhi, May 3, 2024.
5. "AI and Society" at the international annual meeting of the General Curia of the Society of Jesus, Rome, Italy, on Nov 28, 2023.
6. "AI and Social Justice" at the international annual meeting of the Social Justice and Ecology Secretariat of the Society of Jesus, Rome, Italy, on 4 March, 2023. (Virtual).
7. "Data Provenance" at the international annual webinar organized by St. Joseph College, Trichy, Tamil Nadu, India, June 26-30, 2023. (Virtual).
8. "Massive Open Online Courses (MOOCs): Its Hype and Hope" at Universidad Iberoamericana Tijuana, Mexico, on 1 June, 2015.

❖ **Workshops, Seminars and Training Programmes: Conducted (some workshops)**

1. Conducted a two-day workshop on "IPR and Music in the Era of AI" in collaboration with the Ministry of Commerce, government of India and St. Xavier's University, Kolkata (10-11 April, 2025)

2. Conducted a week-long workshop on "AI and Its Impact on Higher Education" for a group of 200 students from colleges in Darjeeling, India (1-6 April, 2025).

3. Conducted a week-long workshop on "Effective use of AI in Media and Learning" for a group of 20 participants at Janana Deepa Institute, Pune, India (17-23, March, 2025).

4. Conducted a two-day workshop on "Leadership Development" for a group of 150 students from West Bengal State, St. Xavier's University, Kolkata (29-30 March, 2025).

5. Organized a four-day faculty development workshop on "Intellectual Property Rights" for a group of 125 faculty members of St. Xavier's University, Kolkata (24-28, February, 2025).

6. Organized a four-day faculty development workshop on "Artificial Intelligence: Trends and Developments" for 80 participants (online), St. Xavier's University, Kolkata (2-6 September, 2024).

7. Conducted a week-long workshop on AI and Media for a group of 25 participants in Dhyan Ashram, Kolkata, India. (16-20 September, 2024) Conducted a four-day workshop on "AI and Society" for a group of 22 participants at the international annual meeting of the General Curia of the Society of Jesus, Rome, Italy (November 27 - 30, 2023).

8. Conducted a four-day workshop on "Education Strategies in Emergency Situations" for a group of a group of admin staff and teachers of Jesuit Refugee Service, New Delhi, India (9-12 August, 2015).

9. Conducted a five-day workshop on "Designing Online and Hybrid Learning for Higher Education", for a group of on-site facilitators of Jesuit Refugee Service Sri Lanka, Sri Lanka (16-20 July, 2015).

10. Conducted a two-day workshop on "Jesuit Leadership: Principles and Practices" for a group of 30 faculty and staff of Universidad Iberoamericana Tijuana, Mexico (8 - 9 June, 2015).

11. Conducted a one-day seminar on "Massive Open Online Courses (MOOCs): Its Hype and Hope" for a group of 25 faculty of Universidad Iberoamericana Tijuana, Mexico (1 June, 2015).

12. Conducted a two-day workshop on "Meaningful Learning with Technology in Higher Education" for a group of 25 graduate and post graduate students of Universidad Iberoamericana Tijuana, Mexico (4-5, June, 2015).

13. Conducted a five-day workshop on "Effective Teaching with Technology in Higher Education" for a group of 30 professors of Universidad Iberoamericana Tijuana, Mexico (27 May - 2 June, 2015).

14. Conducted a two-day orientation program on "Value Education and Religious Studies" for a group of 45 professors of St. Xavier's College, Kolkata (6-7, June, 2014).

❖ **Workshops, Seminars and Training Programmes: Participated (some workshops)**

1. "Finding Meaning in the Everyday: A Day of Reflection and Awareness Inspired by Ignatian Practices" organized by the Association of Jesuit collaboration, St. Xavier's University, Kolkata, India (18 June, 2025).

2. "Reimagining and Restructuring Jesuit Higher Education in South Asia" organized by Jesuit Higher Education Association South Asia (JHESA) at St. Xavier's College (Autonomous) Ranchi, India (26-28 January, 2025).

3. "Mental Health Awareness Training for Teachers" organized by PSYCHeDGES in collaboration with St. Xavier's University, Kolkata (5-17 December, 2024).

4. "Workshop on Advanced Research Methodology" organized by Nilkanthrao Shinde Science and Arts College, Chandrapur, Maharashtra and ACT Academy, Kerala (Online) (30 September - 7 October, 2024) .

5. "Workshop on IPR" organized by St. Xavier's University, Kolkata (23 August, 2024).

6. "Institutional Values and Best Practices - Ignatian Pedagogical Paradigm (IPP)" organized by St. Xavier's University, Kolkata, India (23March and 8-16 April, 2024).

7. "Discernment-Networking-Collaboration (DNC)" organized by Jesuit higher Education Association South Asia (JHESA) at St. Xavier's College (Autonomous), Kolkata, India 26-28 January, 2024).

8. Data Provenance week 2018: 9 - 13 July, King's College, London, UK.

9. Jesuit schools network colloquium on Ignatian education 2016: Jesuit education - deepening awareness and calling for action, 20-24, June 2016, Xavier University, Cincinnati, Ohio, USA.

10. "Jesuit Commons: Higher Education at the Margins", 5 – 9 March, 2012, Regis University, Denver, USA.

11. "Leading Education Systems at the National Level", 2 May 2011 – 3 June 2011, Harvard Graduate School of Education, Harvard University, Boston, USA.

12. "A Three-day Learning Lab: Systemic Change for Student Success", 27-29 April 2011, Harvard Graduate School of Education, Harvard University, Boston, USA.

13. "Accounting and Management", 1 – 25 April 2005, Indian Social Institute, Delhi, India.

14. "Emotional Intelligence", 1 – 30 April 2004, Indian Social Institute, Delhi, India.

Awards and Achievements

- ❖ JCA Scholarship Award in 2016
- ❖ Best Paper Award – INTAIN 2022