

IEEE T-BIOM Position Paper Track

Overview

IEEE T-BIOM invites submissions of Position Papers aimed at stimulating rigorous intellectual discourse and forward-thinking dialogue about the future trajectory of biometric technology, applications, policy, evaluation, and ethical frameworks. Unlike conventional research articles, position papers should present a clear, well-supported argument addressing critical challenges, emerging technologies, or societal implications in the biometrics domain. Authors are encouraged to advance provocative, well-reasoned stances intended to inspire discussion, guide future research agendas, and inform policymaking and industry practices.

Scope and Future-oriented Themes

Position papers must clearly articulate visionary ideas and future-oriented perspectives, grounded in scholarly reasoning rather than new empirical findings. Potential topics include, but are not limited to:

- **Fundamental Problems in Biometrics:** Discussion of fundamental and foundational problems in biometrics, such as estimating uniqueness and permanence of biometric traits.
- **Ethical, Legal, and Societal Implications:** Ethical dimensions and policy considerations associated with biometric surveillance, privacy erosion, civil liberties, and regulatory frameworks required to mitigate misuse and abuse.
- **Data Governance and Privacy:** Robust governance models, consent frameworks, privacy-preserving architectures (such as federated learning or decentralized identity), and legislative recommendations for protecting biometric data at scale.
- **Global-scale Identity Management:** Challenges and best practices in large-scale biometric identity programs, interoperability across international systems, inclusivity, scalability, and risk management associated with national or global biometric deployments.
- **Fairness, Accessibility, and Inclusion:** Addressing biases in biometric recognition technologies, inclusive system design accommodating diverse populations and disabilities, ensuring equitable access, and developing fairness-aware evaluation protocols.
- **Implications and Future of AI in Biometrics:** Exploration of the role of foundation and new models and generative artificial intelligence in enhancing biometric data synthesis, anonymization, and security, alongside implications for privacy and authenticity.
- **Continuous Authentication and Behavioral Biometrics:** Advancements in continuous authentication approaches utilizing behavioral biometric traits (e.g., typing patterns, gait analysis, or device interaction), emphasizing usability, accuracy, and privacy considerations.
- **Edge Computing and Distributed Biometrics:** The deployment and optimization of biometric systems at the network edge, addressing computational efficiency, real-time processing capabilities, privacy-preserving methodologies, and decentralized biometric architectures.
- **Active and Passive Threats Against Biometric Systems:** consequences and implications of threats and routes of research in for attacks and countermeasures.
- **Evaluation:** To explore the basis and principles underlying biometrics and identity science highlighting differences between individuals, groups of individuals and populations.
- **Quantum-secure Biometric Systems:** Preparing biometric technologies for quantum-era threats, incorporating quantum-resistant cryptographic strategies, and future-proofing biometric security.

Submissions should explicitly connect technological innovation with broader societal contexts, emphasizing ethical responsibilities, regulatory considerations, and the long-term sustainability of biometric practices.

Submission Format

- **Length and Formatting:** Papers should not exceed **8 IEEE format pages** (including references) and must adhere strictly to the IEEE Transactions two-column format.
- **Title and Abstract:** Clearly indicate your position in the title (e.g., “Against Mass Biometric Surveillance”) and articulate position within the Abstract.
- **Introduction:** Boldly state your primary position early within the introduction (e.g., *We argue that biometric data governance urgently requires a global regulatory framework*).
- **Argumentation:** Clearly and logically support your stance through well-structured reasoning, relevant citations, and illustrative examples.
- **Alternative Perspectives:** While optional, addressing counterarguments strengthens the submission, provided they are engaged respectfully and thoughtfully.
- **Original Research Exclusion:** Position papers are conceptual, argumentative, and vision-setting documents and if they do, include only experimentation that is central to that argument.

Review Criteria

Position papers will be rigorously evaluated based on:

1. **Clarity and prominence of the stated position**
2. **Strength and coherence of supporting arguments and evidence**
3. **Relevance and significance of the topic to the future of biometrics**
4. **Ability to provoke meaningful, scholarly discourse**
5. **Comprehensive and respectful engagement with alternative views**
6. **Quality of scholarly writing and adherence to formatting guidelines**

Audience and Impact

Position papers should aim for accessibility and relevance to an interdisciplinary audience comprising biometric researchers, technology developers, policymakers, industry practitioners, and ethics scholars. Papers should balance scholarly rigor with clarity of exposition, ensuring arguments resonate across sectors, influence ongoing debates, and inform future biometric policy and research agendas.

We encourage submissions that not only critique current practices (not a particular paper) but actively shape the scholarly and practical discourse around the responsible, equitable, and secure deployment of biometric technologies.

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