**NEW TOPICS FOR DISCUSSION**

**1. Bridging Classical Statistics and Modern ML**

1. **From p-values to Predictions: The Evolving Language of Evidence**
2. **When Simplicity Wins: Why Linear Models Still Matter in the Age of Deep Learning**
3. **Statistical Thinking in Machine Learning: Beyond the Algorithm**
4. **Revisiting Bias–Variance Tradeoff in Modern ML Architectures**
5. **How Statistical Inference Shapes Responsible AI**

**🔹 2. Data, Uncertainty, and Interpretability**

1. **Quantifying Uncertainty: The Forgotten Pillar of Machine Learning**
2. **Explainable AI Meets Statistical Diagnostics**
3. **Confidence Intervals for Neural Networks — Can We Trust the Predictions?**
4. **Causality vs Correlation: What Every Machine Learning Model Should Know**
5. **The Art of Assumptions: Statistical Foundations of Interpretability**

**🔹 3. Cutting-edge Methods and Trends**

1. **The Rise of Probabilistic Machine Learning**
2. **Statistical Perspectives on Foundation Models (GPT, BERT, etc.)**
3. **Bayesian Deep Learning: Bringing Uncertainty Back into AI**
4. **Modern Resampling Techniques: Bootstraps for Big Data**
5. **Simulation-Based Inference: The Next Statistical Revolution**

**🔹 4. Real-World and Applied Angles**

1. **Trustworthy Predictions: Statistical Validation in AI Systems**
2. **Data Quality as the New Bias: Statistical Challenges in Real Datasets**
3. **From Clinical Trials to AI Models: Lessons from Statistical Rigor**
4. **Small Data, Smart Models: Statistical Tricks When Data Are Limited**
5. **Monitoring Machine Learning Models with Statistical Process Control**

**🔹 5. Philosophy and Future of the Field**

1. **Statistics as the Soul of Machine Learning**
2. **Are We Doing Science or Pattern Matching? The Statistical View of AI**
3. **Toward a Unified Theory of Statistical Learning**
4. **Human Intuition vs Algorithmic Inference: A Statistical Reflection**
5. **The Future Statistician: Hybrid of Mathematician, Programmer, and Ethicist**