Probabilistic Circuits:
Marginal Maximum a Posteriori Queries
Seminar Report

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Abstract

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1 Introduction

2 Preliminaries and Review

marginal queries (MAR), maximum a-posteriori queries (MAP) smoothness, consistency, decomposability, determinism

3 Marginal Maximum A-Posteriori Queries

> **DEFINITION:** (MMAP Query Class)
>
> $$\arg\max_{q \in \mathrm{val}(Q)} p(Q = q | E = e, Z \in I)$$
>
> $$\arg\max_{q \in \mathrm{val}(Q)} \int_I p(q, e, z)\,\mathrm{d}z$$

4 Algorithm

5 Marginal Determinism

6 Application to Marginal Entropy

7 Expressive Efficiency

8 Conclusions

References

Choi, YooJung, Antonio Vergari, and Guy Van den Broeck (October 2020). "Probabilistic Circuits: A Unifying Framework for Tractable Probabilistic Models". In: URL: http://starai.cs.ucla.edu/papers/ProbCirc20.pdf.