1. *Given the Bayesian network below, answer the following queries by hand. Show intermediate steps*

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|  |  |  |  |  |  |  |  |  | *0.6300* |
|  |  |  |  |  |  |  |  |  | *0.0005* |
|  |  |  |  |  |  |  |  |  | 0.2700 |
|  |  |  |  |  |  |  |  |  | 0.0495 |
|  |  |  |  |  |  |  |  |  | 0.0700 |
|  |  |  |  |  |  |  |  |  | 0.0095 |
|  |  |  |  |  |  |  |  |  | 0.0300 |
|  |  |  |  |  |  |  |  |  | 0.9405 |

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|  |  | 0.7000 |
|  |  | 0.0100 |
|  |  | 0.3000 |
|  |  | 0.9900 |

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|  |  |  |  |
|  |  |  | 0.9500 |
|  |  |  | 0.9400 |
|  |  |  | 0.2900 |
|  |  |  | 0.0010 |
|  |  |  | 0.0500 |
|  |  |  | 0.0600 |
|  |  |  | 0.7100 |
|  |  |  | 0.9990 |

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|  |  |  |  | 0.6650 |
|  |  |  |  | 0.6580 |
|  |  |  |  | 0.2030 |
|  |  |  |  | 0.0007 |
|  |  |  |  | 0.0005 |
|  |  |  |  | 0.0006 |
|  |  |  |  | 0.0071 |
|  |  |  |  | 0.0100 |
|  |  |  |  | 0.2850 |
|  |  |  |  | 0.2820 |
|  |  |  |  | 0.0870 |
|  |  |  |  | 0.0003 |
|  |  |  |  | 0.0495 |
|  |  |  |  | 0.0594 |
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|  |  |  | 0.6655 |
|  |  |  | 0.6586 |
|  |  |  | 0.2101 |
|  |  |  | 0.0107 |
|  |  |  | 0.3345 |
|  |  |  | 0.3414 |
|  |  |  | 0.7899 |
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|  | 0.0020 |
|  | 0.9980 |

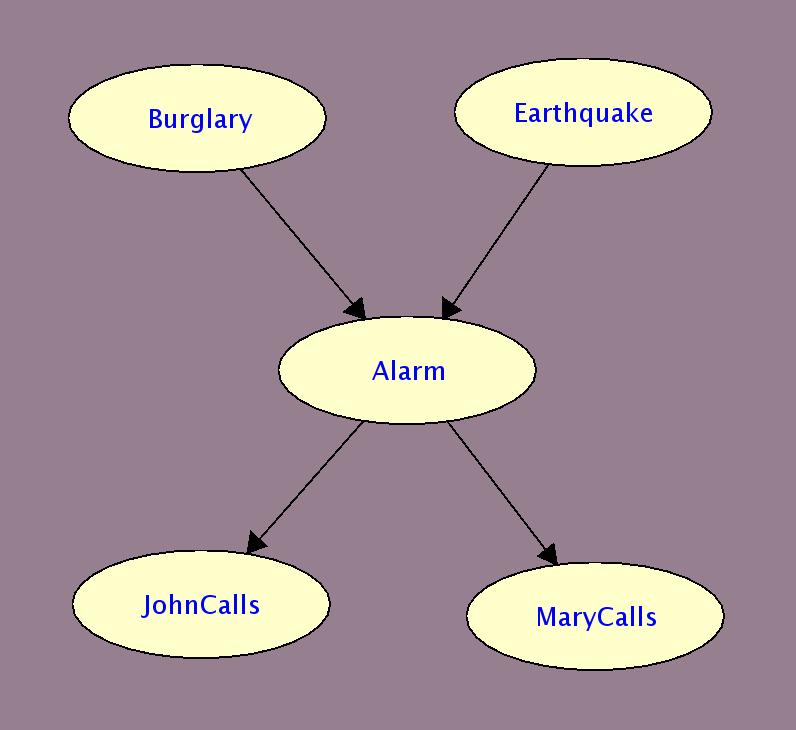
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|  |  | 0.6586 |
|  |  | 0.0111 |
|  |  | 0.3414 |
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|  |  | 0.0007 |
|  |  | 0.0111 |
|  |  | 0.0003 |
|  |  | 0.9879 |

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|  | 0.0117 |
|  | 0.9883 |

1. *Use SamIam to construct the Bayesian network in Part I and then answer the following queries.*

Bayes network



Algorithm used shenoy-shafer

* 2. 0.0016

A Probabilistic Associate Model for Segmenting Weakly Supervised Images

The paper proposes a novel technique of learning semantic associations between super pixels through hierarchical Bayesian network for weakly supervised image segmentation. The experimental results demonstrate that their method achieves better results than other state of the art weakly supervised segmentation algorithms and performs reasonable compared to fully supervised segmentation.

Citations

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Vehicle Detection in Aerial Surveillance using Dynamic Bayesian Networks

The paper uses Dynamic Bayesian Network to detect vehicles in aerial images, the DBN is trained on the local features extracted for each pixel considering its neighborhood. The experimental results demonstrate that the proposed method produces less false positives than existing MVDRD, Cascade Classifiers, Symmetric Properties.

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