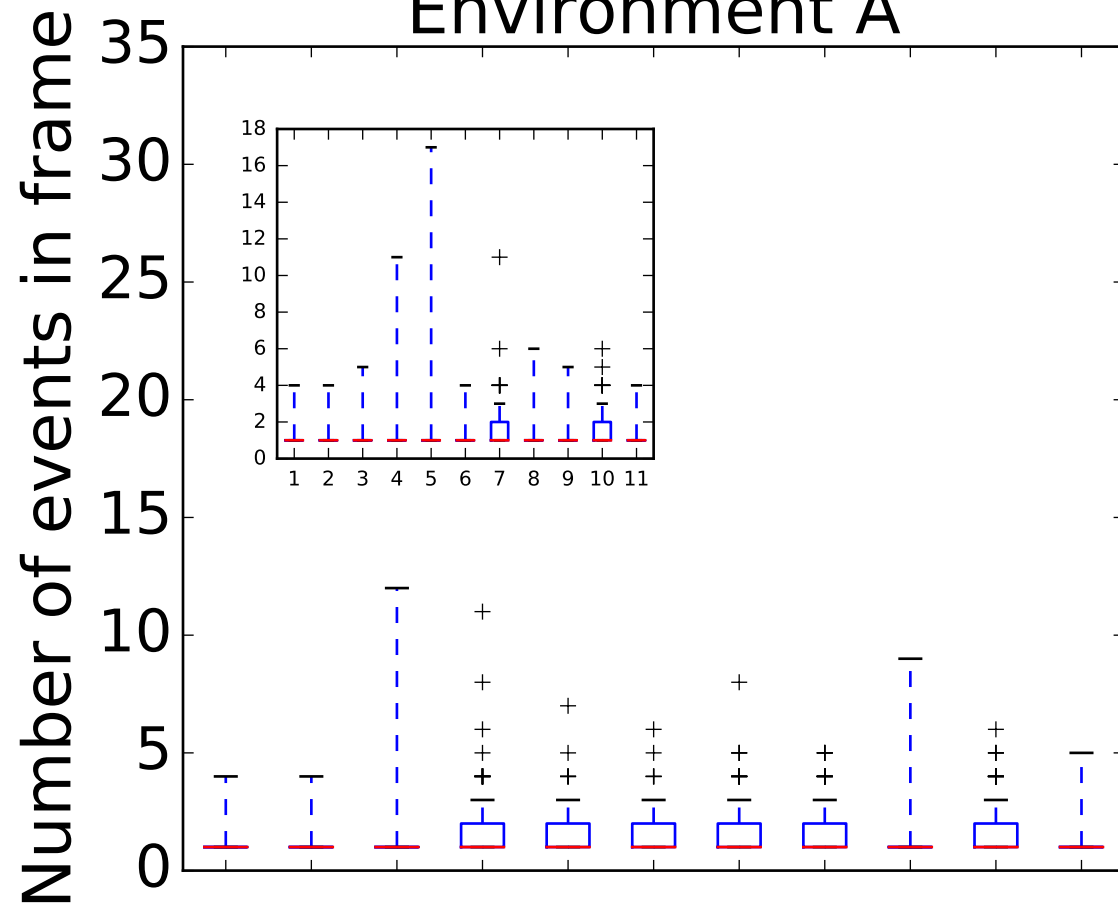Bucket decoding