



Lars Martin S Pedersen

**NTNU**  
Norwegian University of  
Science and Technology  
Faculty of Information Technology,  
Mathematics and Electrical Engineering  
Department of Computer and  
Information Science

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# Postings List Compression and Decompression on Mobile Devices

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```
CFMutableArrayRef numbers = CFArrayCreateMutable(kCFAllocatorDefault, 0, 0ULL);
NSUInteger number = 0;
const Byte *bytes = data.bytes;
for (int i = 0; i < data.length; i++) {
    Byte value = (Byte)bytes[i];
    if (value < 128)
        number = (number << 7) + value;
    else {
        NSUInteger decodedNumber = (number << 7) + (value - 128);
        CFArrayAppendValue(numbers, (void *)decodedNumber);
        decodedDataLength = i;
        const NSUInteger bitLength = (bitLength << 1) + 1;
        number = 0;
        BOOL *bits = (BOOL *)calloc(totalLength, sizeof(BOOL));
        bits[bitLength] = 1;
        NSUInteger bitPosition = bitLength + 1;
        for (NSUInteger i = bitLength - 1; i >= 0; i--) {
            if (key == 0)
                buffer[position] = number & 0xFF;
            else if (key == 1) {
                buffer[position] = number & 0xFF;
                bitPosition++;
                buffer[position + 1] = (number >> 8) & 0xFF;
            }
            else if (key == 2) {
                buffer[position] = number & 0xFF;
                buffer[position + 1] = (number >> 8) & 0xFF;
                buffer[position + 2] = (number >> 16) & 0xFF;
            }
            else {
                buffer[position] = number & 0xFF;
                buffer[position + 1] = (number >> 8) & 0xFF;
                buffer[position + 2] = (number >> 16) & 0xFF;
                buffer[position + 3] = (number >> 24) & 0xFF;
            }
        }
        return [NSData dataWithBytesNoCopy:bits length:totalLength freeBlockOn:YES];
    }
}
```