Source tracker

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March 29, 2018

1 Some general notes on my sources

Not all of my sources have been cross-referenced, although where possibly I've tried to demonstrate links between papers and their common subject matter. This doesn't really cause any problems though, as most of my sources are mathematical in nature. This means that really any source is either "wrong", or "right" about a theorem proposed by that source. This is pretty different from academic literature in more empirical fields, where cross-referencing is crucial. Overwhelmingly, peer-reviewed maths papers older than a couple of years will be correct, and my most important sources are all decades old. This binary nature of mathematics also means that most theorems won't really be produced in more than one paper, except in some cases where an alternative proof is offered.

2 Evaluation

Source	Source content/usage	Source evaluation
Error detecting and error correcting codes [Hamming, 1950]	Gives a construction of Hamming codes and lays the foundation for many of the concepts around channel-coding that I use in my dissertation.	This, is a paper by R. W. Hamming, who contributed much to modern error-correcting codes. It was published over 50 years ago in a respected paper by a respected author and has not only stood the test of time but also formed much of the basis of modern communication theory and can certainly be trusted.
A mathematical theory of communication [Shannon, 1948]	This is also a useful paper for establishing the theory of communicative coding. It is useful for several definitions and general limits.	This paper, together with [Hamming, 1950] are generally considered to be the seminal works on coding theory. This lays much of the groundwork for communication theory and gives a more general definition of the Hamming Code. Similarly to [Hamming, 1950], this is a paper that can be trusted

Generalized dna barcode design based on hamming codes [Bystrykh, 2012]	This article is very much relevant to what my project is about. It doesn't seem to be very clear though, and it uses a seemingly non-optimal form of parity. However it provides helpful insight into what actual researchers in the field are doing and have done with these ideas.	It is an article in a reputable, peer reviewed journal by researchers in the field so it can probably be trusted. The journal is slightly less well-known than some others I've made use of.
Introduction to coding theory [Guruswami, 2010]	This is more of a crash-course in coding theory, which was useful in developing a basic understanding but can be built on.	It's not an academic article so it hasn't been peer reviewed and wasn't written with the aim of academic rigour. However it was produced by a mathematician at a prestigious university so is likely to have some merit. It's also specifically aimed at the teaching of the subject rather than academic description which may be useful for my purposes.
Polynomial codes: an optimal design for high-dimensional coded matrix multiplication [Yu, Maddah-Ali and Avestimehr, 2017]	This source provides an explanation of a facet of the polynomial code. This code type didn't end up being used for my project but the source was useful in explaining why not.	This source is very technically detailed, which isn't necessarily bad, but this source feels very dense and can very well be difficult to understand for anyone not familiar with this specific subfield of coding theory. Of course it does have academic merit as it's a published, peer reviewed article.
Families of Hadamard z2z4q8-codes [del Río and Rifà, 2012]	This is an article relating to a specific subset of Hadamard codes. I didn't end up using these codes but this source provided some broader context for what Hadamard codes are/can be used for.	This is again a highly technical source but is generally reputable aside from that.
Hadamard matrices and their applications [Hedayat and Wallis, 1978]	This is a reasonably low-level paper about Hadamard codes. This was useful for my dissertation as I didn't use any overly complicated Hadamard constructions, and this was a useful source to cite, while also being trustworthy...	It's an academic paper from a trustworthy journal that has stood the test of time, and aside from that doesn't really make any outrageous claims, forming more of a useful and approachable summary of the subject matter.

The search for Hadamard matrices [Golomb and Baumert, 1963]	This paper gives a useful initial summary of the 'basic' construction of Hadamard matrices (of size $2^n \times 2^n$) which I use, corroborating [Hedayat and Wallis, 1978]. It also provides a nice summary of other constructions, which I used to strengthen my case for not using them as they seemed unnecessary.	It's a trustworthy article, and again provides more of a summary. It's written in a relatively friendly manner.
Hadamard matrices and their designs: A coding-theoretic approach [Assmus and Key, 1992]	This paper gives a number of very mathematically involved constructions of Hadamard matrices. I didn't end up using any of these but it provided a useful further background around Hadamard constructions, and could be compared/contrasted with [Golomb and Baumert, 1963]	It's a trustworthy paper from a trustworthy journal and trustworthy authors.
Hadamard designs [Spence, 1972]	This paper is about Hadamard designs for alphabets of size n where $n \neq 2$. This is potentially very interesting with respect to my project as the DNA alphabet size n is 4. This source was used to provide citations in my general discussion about conversion between different alphabets.	It's a trustworthy paper although it is on an apparently quite obscure subject, making it quite a rare occurrence. This doesn't really reflect on the trustworthiness of the source due to the reasons described in section 1.
Lifted polynomials over F_{16} and their applications to dna codes [Oztas and Siap, 2013]		
Codes, not ciphers [Baylis, 2010]		
Error correcting codes: Practical origins and mathematical implications [Pless, 1978]		

Boole and the algebra of logic [Kneale, 1956]	This is used as a small citation on Boolean algebra, which I needed when I was writing about my decision to use boolean inversion rather than additive inversion for my Hadamard construction. This isn't a very mathematically advanced source, but this is in line with my project as Boolean algebra was only a small part of a subset of my project, and the main focus was not on Boolean algebra.	This isn't really an article but a set of notes as it was published in 'Notes and Records of the Royal Society of London'. While this means it's not the epitome of academic rigour, it's still a useful and factual source on Boolean algebra from the Royal Society.
The degeneracy of the genetic code and Hadamard matrices. [Petoukhov, 2008]		
Construction of multilevel Hadamard matrices with small alphabet [Trinh and Fan, 2008]		
Decoding the hamming code [Ehrenborg, 2006]		

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