

## David MacKay

### Software + data files

#### Software

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### **C code**

- The old **bigback** Bayesian neural network simulator. [source code for bigback5](#). [information \(not up to date\)](#). I wrote bigback to develop and test the ideas of my phd, for research purposes only. I used it to make my winning entry in the prediction competition. It can implement Bayesian methods for regression nets and classifiers but is a research tool only. Commercial users are asked to send a donation to support my research if they use this software. Anyone interested in non-linear data modelling with neural networks is encouraged to look into [Gaussian processes](#).
- Bigback has been used to create several Materials Modelling Algorithms. See [Materials Algorithms Project](#) website then go to [Neural networks section](#)
- **macopt**: A conjugate gradient optimizer that I wrote, which only makes use of gradient information and doesn't need a routine that returns the function value. [More information about macopt](#).
- **Free Energy Code tar**. (For decoding and cryptanalysis. Please contact me before taking this code.)
- **Software for simulation of MN codes and GL codes (almost the best error correcting codes in the world!) tar**. (c) David MacKay and Radford Neal. see also [Radford Neal's software](#)
- A couple of codes for use with the above MN/GL software can be found here: [tar](#). Or you can get individual files here [directory](#). There are three files for each code: A, Cn and G. A is the parity check matrix, and G is the generator matrix. See also [Encyclopedia of sparse graph codes](#).

### **Perl code**

I have written tons of perl programs, which you can find [here](#). All supplied without warranty. ([Get perl here](#))

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