

## Re: VON NEUMANN VS HARVARD

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  - *Date:* Mon, 10 Apr 2006 16:57:44 GMT
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"UFO Joe" <[UFO-Joe@xxxxxxxxxxx](mailto:UFO-Joe@xxxxxxxxxxx)> wrote:

Excerpted from AVR Butterfly Site at: <http://retrodan.tripod.com>

### VON NEUMANN vs. HARVARD ARCHITECTURE

If you are new to Microcontrollers one of the arguments you are going to hear bantered about is Harvard Architecture versus the Von Neumann Architecture.

In my opinion everything that uses the harvard architecture is very, very outdated.

The main problem with the HA is that you have seperate memory spaces. C doesn't like that. You'll have to test which memory space a pointer is pointing to. Functions like memcpy, printf, etc, etc, won't work with any pointer. Ofcourse you can kludge things together, but in the end you'll find yourself locked to that target. With ever shorter product life times you'll want to move your code to other platforms or develop on a PC and then transfer the algorithm to an embedded device.

Modern processors use an instruction and data cache which basically 'emulate' the harvard architecture without its downsides.

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