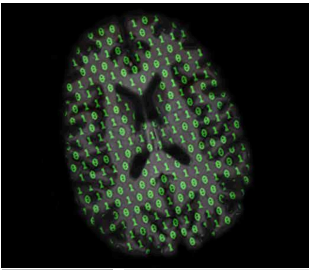




THEME 3 / LECTURE 7: INSTALLING ANTSR



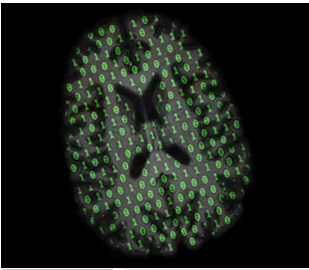
Pre-Processing with ANTsR

- Advanced normalization tools (ANTs): software that can perform many neuroimaging-related functions
 - Collection of routines in C, C++, and some R
- ANTsR: port of ANTs into R using Rcpp
- We focus on
 - Image inhomogeneity correction (N3 and N4)
 - Image registration

J.G. Sled, A.P. Zijdenbos, and A.C. Evans. A nonparametric method for automatic correction of intensity nonuniformity in MRI data". In: Medical Imaging, IEEE Transactions on 17.1 (1998), pp. 87-97

N.J. Tustison et al. N4ITK: improved N3 bias correction". In: Medical Imaging, IEEE Transactions on 29.6 (2010), pp. 1310-1320.

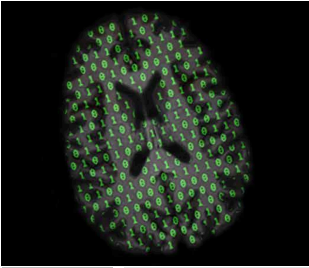
<http://www.nitrc.org/projects/antsr/>



ANTsR installation

- **Linux/Mac:** <https://github.com/stnava/ANTsR>, GitHub (details to follow)
- **Windows:** <https://smart-stats-tools.org/mooc-2015>
 - Recommended approach for Windows
 - Download [VirtualBox](#) a free x86 and AMD64/Intel64 virtualization product.
 - The Virtual Machine compressed image (~3.3GB) can be downloaded from [here](#). Make sure you move the archive to a folder of your choice and then decompress it
 - Install the VirtualBox and once that's complete add the virtual machine using the VirtualBox main menu Machine->Add or simply press the CTRL+A combination. A file browser window will open and you need to navigate to the folder created in step 2 and locate the virtual machine image file
 - Once the MOOC virtual machine is added to the VirtualBox start it up by pressing the green Start arrow. The username is fsluser and the password is fsluser, change it if needed
 - This virtual machine comes with all necessary R packages pre-installed (including ANTsR)
 - MOOC sample images were provided and they are located on your virtual machine desktop under "MOOC 2015 data" folder.
 - The virtual machine already has installed the necessary tools for setting up a shared folder with the native operating system (WIN). Please check [this easy tutorial](#) that explains the process. Once the folder is set, a reboot of the virtual machine is required and you should be able to access the shared folder by opening the "shared" desktop folder.
 - Data are now loaded in

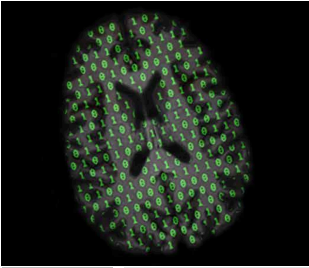
`"/home/fsluser/Desktop/MOOC-2015"`



Installing ANTsR (Unix/Mac)

- ANTsR is currently (as of March 23, 2015) hosted on GitHub
- We will install ANTsR using the devtools package
- Overall, any updates to the install process will be located at

<https://github.com/stnava/ANTsR>



Installing ANTsR

```
if (!require(devtools)) {install.packages(devtools)}  
devtools::install_github("stnava/cmake")  
devtools::install_github("stnava/ITKR")  
devtools::install_github("stnava/ANTsR")
```

This takes ~20 minutes