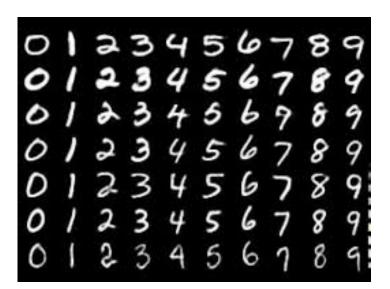# Project One (tentative)

- **Project one (20%): machine learning algorithms and models**

  - **Use a popular data set MNIST**

    (http://yann.lecun.com/exdb/mnist/)

  - **Feature extraction, data virtualization**

  - **Linear regression, logistic regression**

  - **Linear/nonlinear SVM**

  - **Neural networks**

- **Need your own implementation, not just function calls**

- **Submit all of your codes and scripts, a project report**

- **Evaluation depends on your implementation, report and performance**

Project Two (tentative)

- **Project two (30%): machine learning related research**

  - **Define your own research problem**

  - **Select your own models (deep learning, graphical models, …)**

  - **Choose any open source toolkit**

  - **Link to your advanced study topic**

  - **Link to your own research areas**

- **Write me 1-page proposal (500 words) as soon as possible**

- **Submit codes and a report (like a 8-page conference paper)**

- **Evaluation: problem, idea, method, experiments, writing, …**