Module 0
Software needed for the OCR workshop

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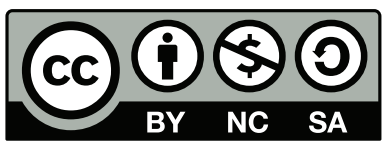

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Introduction

This is a list of software requirements to successfully complete the practice sessions and maximize your learning experience of the workshop on
OCR and postcorrection of early printings for digital humanities
at LMU, Munich 2015-09-14/15

- on OS: Linux is your best option; MacOS can be used almost as well (some problems might arise with OCRopus installation); Windows users will not be able to train or run OCRopus models (they may consider a virtualbox Linux installation)
- our focus is on open source software
- for Linux, almost all software is available in its package repositories and can be installed from there
- you will be optimally prepared if the software is running on your laptop before the workshop begins, and you know how to use it
- the software packages mentioned below are part of a complete OCR toolchain - if you miss some parts because of installation problems, we will provide you with suitable input data for each separate step

OCR engines I

- we will treat *Tesseract* and *OCRopus* (open source engines) as well as *Abbyy Finereader* (commercial)
- Tesseract and OCRopus can be downloaded and installed locally; Abbyy will provide a demo key for its online service
- both Tesseract and OCRopus have recently been moved from Google Code to GitHub (click on blue inline links and follow the installation procedures):
  - Tesseract: available for Linux, Mac, Windows
  - OCRopus: Linux (Mac)
  - OCRopus (now called Ocropy) can be installed in your home directory:

```
python setup.py install --home=~/<install-dir>
export PATH=$HOME/<install-dir>/bin:$PATH
export PYTHONPATH=$HOME/<install-dir>/lib/python
```

- if you want to install OCRopus in a docker environment (Mac):
  - use the Ocrocis wrapper

OCR engines II

- don't forget to also download some Tesseract training files for languages, called lang.traineddata:
  - deu_frak: German Fraktur
  - grc: Ancient Greek from Nick White
  - lat: Latin from Ryan Baumann

Graphical frontends for Tesseract (optional)

- gImageReader: Linux & Windows
  - Windows installation tips
- VietOCR: Linux, Mac, Windows

Downloading and installing the postcorrection tool PoCoTo

- download the binary distribution of PoCoTo
- this will download a zipped archive file `ocrcorrection.zip`.
- extract (unzip) this archive to a convenient place somewhere in your user directory
- this will create a folder `ocrcorrection`
- in the folder `ocrcorrection/bin`, identify the appropriate executable for your operating system:
  - MS Windows: either `ocrcorrection.exe` or `ocrcorrection64.exe`
  - otherwise it is the file `ocrcorrection`
- before you start the application, make sure that the Java Runtime Environment (jre) is installed on your system
- PoCoTO is described in detail in its manual which may be consulted for any questions

Preprocessing tools

- split pdf into single page images:
  - `pdftk` from PDFtk
- further pdf tools:
  - `pdftoppm, pdfimages` from Xpdf tools, or (Linux) from poppler-utils package
- format conversion:
  - `convert` from ImageMagick
- further preprocessing: ScanTailord
- learn how to use ScanTailor

OCR evaluation toolkit

- we need to be able to evaluate OCR output against ground truth
- a widely used tool collection is the Rice/Nartker UNLV/ISRI OCR evaluation toolkit
- user guide and source code with UTF-8 wrapper from Nick White
- needs to be compiled locally

Fonts with good glyph coverage

- Fonts supporting old glyphs
- Junicode is used for this workshop