

The Open Digital Archaeology Textbook Environment

Shawn Graham, Neha Gupta, Michael Carter, & Beth Compton

2017-02-08

Contents

Welcome	5
Introduction	7
About the Authors	i
Getting Started	iii
0.1 How to use this text	iii
0.2 How to contribute changes, or make your own version	iii
0.3 How to access and use the computational environment	iii
0.4 Colophon	iii
Part One: Going Digital	1
1 Project management basics	3
1.1 Github & Version control	3
1.2 Failing Productively	3
1.3 Open Notebook Research & Scholarly Communication	3
2 The Ethics of Big Data in Archaeology	5
3 Introduction to Digital Libraries, Archives & Repositories	7
3.1 Command Line Methods for Working with APIs	7
3.2 Working with Open Context	7
3.3 Working with Omeka	7
3.4 Working with tDAR	7
3.5 Working with ADS	7
Part Two: Making Data Useful	9
4 Designing Data Collection	11
5 Cleaning Data with Open Refine	13
6 Linked Open Data and Data Publishing	15
Part Three: Finding and Communicating the Compelling Story	17
7 Statistical Computing with R and Python Notebooks; Reproducible code	19
8 D3, Processing, and Data Driven Documents	21
9 Storytelling and the Archaeological CMS: Omeka, Kora	23

10 Web Mapping with Leaflet	25
11 Place-based Interpretation with Locative Augmented Reality	27
12 Archaeogaming and Virtual Archaeology	29
13 Social media as Public Engagement & Scholarly Communication in Archaeology	31
Part Four: Eliding the Digital and the Physical	33
14 3D Photogrammetry & Structure from Motion	35
15 3D Printing, the Internet of Things and “Maker” Archaeology	37
16 Artificial Intelligence in Digital Archaeology	39
16.1 agent models	39
16.2 machine learning for image captioning and other classificatory tasks	39
Part Five: Digital Archaeology’s Place in the World	41
17 Marketing Digital Archaeology	43
18 Sustainability & Power in Digital Archaeology	45

Welcome

This volume goes hand-in-glove with a computational environment built on the DHBox.



The online version of this book is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

Introduction

Digital archaeology as a field rests upon the creative use of primarily open-source and/or open-access materials to archive, reuse, visualize, analyze and communicate archaeological data. This reliance on open-source and open-access is a political stance that emerges in opposition to archaeology's past complicity in colonial enterprises and scholarship; digital archaeology resists the digital neo-colonialism of Google, Facebook, and similar tech giants that typically promote disciplinary silos and closed data repositories. Specifically, digital archaeology encourages innovative, reflective, and critical use of open access data and the development of digital tools that facilitate linkages and analysis across varied digital sources.

To that end, this document you are reading is integrated with a cloud-based digital exploratory laboratory of multiple cloud-computing tools with teaching materials that instructors will be able to use 'out-of-the-box' with a single click, or to remix as circumstances dictate. Part of our inspiration comes from the 'DHBox' project from CUNY (City University of New York, [link](#)), a project that is creating a 'digital humanities laboratory' in the cloud. While the tools of the digital humanities are congruent with those of digital archaeology, they are typically configured to work with texts rather than material culture in which archaeologists specialise. The second inspiration is the open-access guide 'The Programming Historian', which is a series of how-tos and tutorials ([link](#)) pitched at historians confronting digital sources for the first time. A key challenge scholars face in carrying out novel digital analysis is how to install or configure software; each 'Programming Historian' tutorial therefore explains in length and in detail how to configure software. The present e-textbook merges the best of both approaches to create a singular experience for instructors and students: a one-click digital laboratory approach, where installation of materials is not an issue, and with carefully designed tutorials and lessons on theory and practice in digital archaeology.

About the Authors

Shawn Graham

At Carleton etc

Neha Gupta

blah

Michael Carter

blah

Beth Compton

blah

Getting Started

0.1 How to use this text

yadda

0.2 How to contribute changes, or make your own version

bigglybeep

0.3 How to access and use the computational environment

link to site, instructions, also repo, also dhbox-on-a-stick

0.4 Colophon

how this site was made

Part One: Going Digital

In this section, blah blah blah.

0.4.1 discussion

0.4.2 exercises

blah

Chapter 1

Project management basics

blah

1.1 Github & Version control

blah ### discussion

1.1.1 exercises

1.2 Failing Productively

blah

1.2.1 discussion

1.2.2 exercises

1.3 Open Notebook Research & Scholarly Communication

blah

1.3.1 discussion

1.3.2 exercises

Chapter 2

The Ethics of Big Data in Archaeology

Ethics! Lots of Ethics!

2.0.1 discussion

2.0.2 exercises

Chapter 3

Introduction to Digital Libraries, Archives & Repositories

yadda

3.1 Command Line Methods for Working with APIs

yadda

3.2 Working with Open Context

yadda

3.3 Working with Omeka

yadda

3.4 Working with tDAR

yadda

3.5 Working with ADS

yadda

Part Two: Making Data Useful

blah blah introd

Chapter 4

Designing Data Collection

yada yada

4.0.1 discussion

4.0.2 exercises

Chapter 5

Cleaning Data with Open Refine

blahde blah blah

5.0.1 discussion

5.0.2 exercises

Chapter 6

Linked Open Data and Data Publishing

yargble blarble floss

6.0.1 discussion

6.0.2 exercises

Part Three: Finding and Communicating the Compelling Story

blah blah blah

Chapter 7

Statistical Computing with R and Python Notebooks; Reproducible code

blah ### discussion

7.0.1 exercises

Chapter 8

D3, Processing, and Data Driven Documents

blerg ### discussion

8.0.1 exercises

Chapter 9

Storytelling and the Archaeological CMS: Omeka, Kora

blargle

Chapter 10

Web Mapping with Leaflet

...I wonder if we should talk about GIS & Pandas, etc... or in R?

10.0.1 discussion

10.0.2 exercises

Chapter 11

Place-based Interpretation with Locative Augmented Reality

yep.

11.0.1 discussion

11.0.2 exercises

Chapter 12

Archaeogaming and Virtual Archaeology

yay archaeogaming

12.0.1 discussion

12.0.2 exercises

Chapter 13

Social media as Public Engagement & Scholarly Communication in Archaeology

boo socmed

13.0.1 discussion

13.0.2 exercises

Part Four: Eliding the Digital and the Physical

crazytown

Chapter 14

3D Photogrammetry & Structure from Motion

vsfm

14.0.1 discussion

14.0.2 exercises

Chapter 15

3D Printing, the Internet of Things and “Maker” Archaeology

yay ### discussion

15.0.1 exercises

Chapter 16

Artificial Intelligence in Digital Archaeology

16.1 agent models

blah

16.1.1 discussion

blah

16.1.2 exercises

blah

16.2 machine learning for image captioning and other classificatory tasks

blah

16.2.1 discussion

blah ### exercises

Part Five: Digital Archaeology's Place in the World

blerg

Chapter 17

Marketing Digital Archaeology

blog ### discussion

17.0.1 exercises

Chapter 18

Sustainability & Power in Digital Archaeology

the big ticket item.

18.0.1 discussion

18.0.2 exercises