

Terrorism, Security, and Computation

M.D. Miller

Discovering Hidden Gems in Foreign Languages

 Springer

Terrorism, Security, and Computation

Series Editor

V. S. Subrahmanian, Department of Computer Science
and Institute for Security, Technology and Society

Dartmouth College

Hanover, NH, USA

The purpose of the Computation and International Security book series is to establish the state of the art and set the course for future research in computational approaches to international security. The scope of this series is broad and aims to look at computational research that addresses topics in counter-terrorism, counter-drug, transnational crime, homeland security, cyber-crime, public policy, international conflict, and stability of nations. Computational research areas that interact with these topics include (but are not restricted to) research in databases, machine learning, data mining, planning, artificial intelligence, operations research, mathematics, network analysis, social networks, computer vision, computer security, biometrics, forecasting, and statistical modeling. The series serves as a central source of reference for information and communications technology that addresses topics related to international security. The series aims to publish thorough and cohesive studies on specific topics in international security that have a computational and/or mathematical theme, as well as works that are larger in scope than survey articles and that will contain more detailed background information. The series also provides a single point of coverage of advanced and timely topics and a forum for topics that may not have reached a level of maturity to warrant a comprehensive textbook.

M. D. Miller

Discovering Hidden Gems in Foreign Languages

 Springer

M. D. Miller
University of California
Berkeley, CA, USA

ISSN 2197-8778 ISSN 2197-8786 (electronic)
Terrorism, Security, and Computation

ISBN 978-3-031-18478-9 ISBN 978-3-031-18479-6 (eBook)
<https://doi.org/10.1007/978-3-031-18479-6>

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Disclaimers and Copyright Notices

The author, nor Springer Nature endorse any of the tools, programs, websites, services, or institutions mentioned throughout this book. Similarly, the providers of the services, owners of the websites, and institutions mentioned throughout this book do not formally endorse the content of this book.

This book contains images that are reprinted here under Creative Commons licensing. Images licensed under Creative Commons licenses retain their original licensing; the reader is free to reuse these images in accordance with the original license. The exact license for each Creative Commons item printed in this book can be found in the corresponding reference list at the end of each chapter. License information for each relevant license can be found at:

- CCO Universal (CC0 1.0) Public Domain Dedication: <https://creativecommons.org/publicdomain/zero/1.0/>.
- Attribution 2.0 Generic (CC BY 2.0): <https://creativecommons.org/licenses/by/2.0/>.
- Attribution-NoDerivs 2.0 Generic (CC BY-ND 2.0): <https://creativecommons.org/licenses/by-nd/2.0/>.
- Attribution-ShareAlike 2.0 Generic (CC BY-SA 2.0): <https://creativecommons.org/licenses/by-sa/2.0/>.
- Creative Commons Attribution-ShareAlike 3.0 Unported License (CC BY-SA 3.0): https://en.wikipedia.org/wiki/Wikipedia:Text_of_Creative_Commons_Attribution-ShareAlike_3.0_Unported_License.
- Attribution-ShareAlike 4.0 International (CC BY-SA 4.0): <https://creativecommons.org/licenses/by-sa/4.0/>.

This book contains images that are reprinted under SUMA-EV, the Association for Free Access to Knowledge. License information can be found at: <https://suma-ev.de/>.

This book contains images whose contents are licensed under the GNU Affero General Public License v3.0 (GNU AGPLv3). License information can be found at: <https://github.com/searx/searx/blob/master/LICENSE>.

Other items are referenced in small amounts throughout this text in accordance with Section 107 of the Copyright Act (Fair Use).

Google, Google Docs, Google Drive, Google Keep, Google Translate, Google Trends, Google Chrome, and YouTube, along with their respective logos, are trademarks of Google LLC. This book is not endorsed by or affiliated with Google in any way. All images of Google owned items are published in accordance with Google's Brand Resource Center policies, which can be found at <https://about.google/brand-resource-center/products-and-services/search-guidelines/>. Google and the Google logo are trademarks of Google LLC.

Microsoft, Bing, Windows, Word, Excel, PowerPoint, and Edge, are trademarks of the Microsoft group of companies. Images of Microsoft products are used with permission from Microsoft. All images of Microsoft owned content are published in accordance with Microsoft's copyright policy, which can be found at <https://www.microsoft.com/en-us/legal/copyright/permissions>.

This book is an independent publication and has not been authorized, sponsored, or otherwise approved by Apple Inc. Apple and Apple Macintosh are trademarks of Apple Inc., registered in the U.S. and other countries and regions. Images of Apple owned software are published in accordance with Apple's copyright policy, which can be found at <https://www.apple.com/legal/intellectual-property/guidelines-for3rdparties.html>.

All images containing the Reddit brand are reproduced in accordance with Reddit brand policies, which can be found at https://www.redditinc.com/assets/images/site/reddit_brand_guidelines_version_2022_2022-04-01-160548_akmi.pdf. Special permission to reproduce one image was obtained from Reddit user u/octolink.

This book contains images from Wikipedia. Wikipedia® is a registered trademark of the Wikimedia Foundation, Inc., a non-profit organization. See: <https://en.wikipedia.org/wiki/Wikipedia:Copyrights> for more information on Wikipedia's copyright policies.

This book contains one image containing the Semrush logo and products. Semrush is a registered trademark of SEMrush Inc. The image included in this book is reproduced in accordance with the Semrush brand policy, which can be accessed here: <https://www.semrush.com/company/legal/brand-policy/>.

For all other images, the author requested and obtained written permission to reproduce images from the following organizations, listed in alphabetical order: Creative Commons (CCSearch), Dassault Systèmes (Exalead), Data.gov, Data Miner, DuckDuckGo, Gibiru, Glosbe, IPVanish, Internet Systems Consortium (ISC), Kapwing, Naver, OCR Space, SerpAPI, Seznam, Stack Exchange, Startpage, Swisscows, ThePashto, Thruuu, Veed.io, and Yandex.

Special thanks to all of the aforementioned organizations. Without your permissions, this book would be very boring.

Preface

I recognize that this book comes at a time when information is increasingly available online from regions of the world where information was previously unavailable or difficult to obtain. The need to narrow search results is not a new problem for today's researchers. The new problem is incorporating resources that capture an international perspective in our global society. What better way to do that than with resources from across the globe?

The modern researcher need not speak every language spoken on the planet—they only need the skill and prowess to discover and understand these resources. This is the purpose of this book. It provides tools to begin discovering the *hidden gems* that exist in other languages that provide a global perspective on a wide variety of topics. It is time for the modern researcher to step outside their comfort zone and seek perspectives which they might not normally understand. It is using these perspectives that the researcher may finally begin to challenge accepted norms and combat their own biases.

Indeed, foreign language research can be frustrating and uncomfortable; efforts to find certain resources may sometimes fail, too. This is ok—there will be times when the information sought does not exist in any language. However, if the information sought does exist, the researcher may now have a greater chance of finding it than ever before.

Generally, books that discuss online services do not age well. There is always the risk that websites, services, and links hosted online may cease to exist in the future. The year is 2023: the references contained therein existed at this time. Additionally, newer resources may come into existence in the future that would have been relevant to include here. The researcher will uncover new resources that support their research needs that are not in this book. This book does not aim to include every search engine, every database, or every link that the researcher may need in their research project. This would be an impossible task. Rather, it cites examples to demonstrate how research can be done and processes replicated. I encourage the reader to establish their own methods that work for their research needs. This book offers a starting place.

Finally, I would like to express my gratitude to those who helped and inspired me to write and complete this book. First, the editorial and administrative staff at Springer Nature, who gave me the opportunity to share my thoughts. It is a tremendous honor to share my work with this fine publisher, whose books I read all throughout college.

Thank you to the content creators who agreed to share their copyright materials with me, and allowed me to reproduce it here. Many of the images used throughout this book are not my own work; yet they offer an invaluable demonstration of how search techniques and tools serve our purposes. Without them, this book makes no sense.

I would also like to thank my colleagues at the various academic institutions I have studied, who showed me the need for such a book. Without them, I may have kept these thoughts to myself.

Finally, I would like to thank my husband and our tuxedo cats. You let me “suffer in silence,” which was absolutely necessary for me to complete this book. It was not easy to sit at the computer and write when I knew you were sitting idly by. Thank you to the cats, for always keeping me company. These cats spent countless hours curled up on my lap as I typed.

Good luck, and enjoy!

Berkeley, CA, USA

M. D. Miller

Contents

1	Introduction to Foreign-Language Research	1
1.1	What Is Foreign-Language Research?	1
1.2	Who Is this Book for	2
1.3	Benefits of Foreign-Language Research	2
1.4	Establishing Research Goals and Asking a Research Question.	4
1.5	Veracity of Foreign Sources.	5
1.6	Language Keyboards in Microsoft Windows and Apple Macintosh.	6
1.6.1	Microsoft Windows 10.	6
1.6.2	Apple Macintosh	10
1.7	Virtual Private Networks (VPNs) and Geographic Restrictions	14
1.8	Foreign Alphabets	16
1.9	Book Outline	33
	Online Database References	33
2	Preparing to Conduct Foreign-Language Research	35
2.1	Getting Started with Key Terms and Phrases.	35
2.2	Foreign-Language Research Support Using Wikipedia.	38
2.3	By-Country Website Popularity	42
2.4	Country-Specific Search Engines	43
2.4.1	Seznam (Czechia)	43
2.4.2	Exalead (France)	45
2.4.3	Yandex (Russia)	47
2.4.4	Baidu (China).	47
2.4.5	Yamli (Saudi Arabia)	48
2.4.6	Parsijoo (Iran)	48
2.4.7	MetaGer (Germany).	49
2.4.8	Swisscows (Switzerland)	50
2.5	Other Search Engines with Useful Features for Foreign-Language Research.	50
2.5.1	DuckDuckGo	51

2.5.2	Searx	52
2.5.3	CCSearch (Creative Commons Search)	57
2.5.4	Gibiru	59
2.5.5	Million Short	60
2.6	Downloading Online Search Results and Specialized Website Content	61
2.6.1	Searx	62
2.6.2	Thruuu	62
2.6.3	Data Miner	65
2.6.4	Google Trends	68
2.6.5	SerpAPI	69
	Online Database References	70
3	Discovering Foreign Language Resources Online	71
3.1	Discovering Exact Phrases with Quotation Marks	71
3.2	Discovering Combinations of Words with AND and OR	79
3.3	Discovering Key Terms in Website Titles with intitle: and allintitle:	87
3.4	Discovering Website Content with intext:, allintext:, inbody:, +, and –	92
3.5	Locating URLs with inurl:, allinurl:, and url:	99
3.6	Discovering Online Documents with filetype:, ext:, and mime: ...	109
3.7	Searching Websites with site:	114
3.7.1	Impact of Website Development Best Practices on Foreign-Language Research	121
3.8	Locating Links to Websites with link:	131
3.9	Discovering Related Websites with related:	133
3.10	Specifying Search Language with lang: or language:	134
3.11	Discovering Results from a Specified Date with before:, after:, date:, and inurl:	138
3.12	Discovering Topical Books with book: and the Google Books Database	145
3.13	Locating Results Geographically with loc:	152
	Online Database References	157
4	Country-Specific Domains and Non-Latin-Character Domains	159
4.1	Narrowing Online Searches to a Country Code Top-Level Domain (ccTLD)	161
4.2	Non-Latin-Character ccTLDs (ccIDNs)	163
4.3	Country Code Second-Level Domains (cc2LDs)	166
4.4	List of ccTLD Registries	168
4.5	List of Non-Country Top-Level Domain (TLD) Registries	171
4.6	Resources	172
	Online Database References	172

- 5 Translation Tools and Techniques** 173
 - 5.1 Translating Text 174
 - 5.1.1 Seznam Slovník 174
 - 5.1.2 Google Translate 176
 - 5.1.3 Yandex Translate 178
 - 5.1.4 thePashto 179
 - 5.1.5 Glosbe 180
 - 5.1.6 Naver Dictionary 180
 - 5.1.7 Reverso Context 184
 - 5.1.8 Wiktionary 186
 - 5.1.9 Linguee/DeepL Translator 187
 - 5.1.10 Text Translation in Microsoft Office Products 188
 - 5.2 Translating Live Websites 189
 - 5.2.1 Google Translate 190
 - 5.2.2 Naver Papago 190
 - 5.2.3 Yandex Translate 193
 - 5.3 Translating Documents 194
 - 5.3.1 DeepL Translator 194
 - 5.3.2 Translating an Entire Document in Microsoft Office Applications 195
 - 5.3.3 Google Translate 196
 - 5.3.4 Converting Text in Google Docs and Google Drive 197
 - 5.3.5 Yandex Translate 202
 - 5.4 Translating Images 204
 - 5.4.1 Yandex Translate 204
 - 5.4.2 Google Keep 205
 - 5.4.3 OCR Space 207
 - 5.5 Translating Video 209
 - 5.5.1 YouTube Subtitles 209
 - 5.5.2 Veed 210
 - 5.5.3 Kapwing 213
 - 5.6 Translator Communities of Interest 218
 - 5.6.1 r/translator (Reddit) 220
 - 5.6.2 Stack Exchange (Culture and Recreation) 221
 - 5.6.3 Wiktionary Tea Room 222
 - Online Database References 224
- 6 Case Studies** 227
 - 6.1 Discovering Data Sets from Foreign Sources 227
 - 6.2 Discovering Russian Think Tanks 233
 - 6.3 Smart Cities Around the World 239
 - Online Database Reference 249
- 7 Citing Foreign-Language Resources and Translations** 251
 - 7.1 Foreign-Language Citations in Turabian 251
 - 7.1.1 Citing Books in Turabian 252

- 7.1.2 Citing Websites in Turabian 253
- 7.1.3 Citing Journal Articles in Turabian 253
- 7.1.4 Citing Videos in Turabian 254
- 7.2 Foreign-Language Citations in Chicago 255
 - 7.2.1 Citing Books in Chicago 255
 - 7.2.2 Citing Websites in Chicago 256
 - 7.2.3 Citing Journal Articles in Chicago 257
 - 7.2.4 Citing Videos in Chicago 257
- 7.3 Foreign-Language Citations in APA 258
 - 7.3.1 Citing Books in APA 258
 - 7.3.2 Citing Websites in APA 259
 - 7.3.3 Citing Journal Articles in APA 260
 - 7.3.4 Citing Videos in APA 261
- 7.4 Foreign-Language Citations in MLA 262
 - 7.4.1 Citing Books in MLA 262
 - 7.4.2 Citing Websites in MLA 263
 - 7.4.3 Citing Journal Articles in MLA 263
 - 7.4.4 Citing Videos in MLA 264
- 8 Appendices 267**
 - 8.1 List of Country-Based Web Directories 267
 - 8.2 List of Country-Specific Domains in Major Search Engines 270
 - 8.2.1 List of Google Domains 271
 - 8.2.2 List of Bing Domains 275
 - 8.2.3 List of Yahoo Domains 277
 - 8.2.4 List of DuckDuckGo Domains 279
 - 8.3 List of Country-Based Search Engines 281
 - Online Database References 283
- Index 285**

About the Author

M. D. Miller has a passion for Internet research and studying foreign languages. She holds an academic degree in Slavic Languages and Literature from the University of California, Berkeley. She lives in the United States with her husband.

Chapter 1

Introduction to Foreign-Language Research



This chapter introduces the definition, concept, and overall need for foreign-language research. It describes the benefits of incorporating foreign-language resources in the context of a larger research question and scope of knowledge on a topic. This chapter also discusses the development and scope of research questions that have an inherent foreign-language nexus. That is, a research question that may otherwise only offer a perspective native to the author's geographic location and language can be expanded to include a foreign viewpoint. Another concern with foreign-language research is the veracity of foreign sources, which is also addressed here.

To get the researcher started, this chapter also introduces some fundamental language tools, including a step-by-step guide with instructions to set up foreign-language keyboards on a computer. The use of Virtual Private Networks, or VPNs, can also improve and resource discovery. Finally, this chapter includes examples of the key features of some common foreign alphabets to aid the researcher with the passive identification of languages as they may appear in the wild.

1.1 What Is Foreign-Language Research?

Foreign-language research describes the process of discovering and enumerating foreign-language resources into the context of the researcher's overall research goals. Incorporating resources from the researcher's native tongue, the foreign-language researcher offers an all-encompassing view of a subject by adding resources from different regions of the world. Foreign-language ability does not bound the modern researcher only to research in languages they speak—it provides an opportunity to add to the depth and breadth of the researcher's own original thoughts. It helps the researcher represent the thoughts of a globalized society, and captures how modern research does not exist in a vacuum.

To help capture the concept of foreign-language research, it is also helpful to describe what it is *not*: it is *not* simply using Google Translate to discover what something says. It is *not* just reading the auto-translated subtitles of a video: it is so much more than that. It requires the researcher to go out of their way to discover opposing thought, and interpret the content of the foreign-language resource in the context of the source itself.

1.2 Who Is this Book for

This book is for anyone looking to extend their research abilities beyond their current capabilities. Undoubtedly, anyone who might be interested in this book has already been conducting research for quite some time, and some may have even published works of their own. This book is for those looking to challenge themselves, and those looking to expand upon the aperture of their current research methods. In no particular order, this book will primarily be beneficial to:

- Academics, to include students and faculty at all levels.
- Authors, journalists, and members of the media.
- Open-Source (OSINT) researchers.
- Business Intelligence analysts.
- Investigators and Forensic Investigators.
- Monolinguals, or those interested in capturing the views of others who speak a foreign language.

The reader may have already picked up the OSINT research books by Don MacLeod, Michael Bazzell, Johnny Long, or other brave stewards of the OSINT research community—and these are excellent books. This book expands upon the existing books on Open-Source research by introducing how one might use these methods to discover foreign-language resources. Business intelligence professionals may be interested to know what their competition is doing; competing companies may have offices in foreign countries, and their resources may exist only in another language. A medical researcher may be interested to know how their counterparts in a foreign country are tackling today’s most challenging research questions. Even the reader who speaks many languages cannot know every single language on the planet. The multilingual, too, will benefit from knowing the resources that exist in a language they do not speak.

1.3 Benefits of Foreign-Language Research

Simply put, foreign-language resources fall into the category of resources that the researcher would not otherwise know because they exist in a language that the researcher does not speak. Often times, when conducting a search online or even for

print resources, these foreign-language results fall to the bottom of the list. A simple Google search for any common term will often yield *millions* of results, but rarely will the researcher see the millionth result, let alone the eleventh. The desired results, i.e., the results in question, exist somewhere in the middle of the pile. Why permit the search engine to decide which sources the researcher should see? Below are just some of the benefits of discovering and incorporating foreign-language resources into any project:

- Discover new resources.
- Take control of search output.
- Cut research time significantly.
- View the exact desired results without too much extra digging.
- Expand the aperture of research findings beyond the expected.
- Generate counterarguments.
- Capture the whole of opinion of a subject.
- Learn what those of a foreign culture believe about a topic.
- Discover new research goals entirely (i.e., ask research questions that would otherwise not be asked).

Once the researcher decides that there is value to their project in adding foreign-language resources, the researcher should establish the scope and goals of the research. To be successful in this endeavor, the researcher should acknowledge how the new sources available impact the goals of the research and the findings.

Another way to consider the benefits of foreign-language research is using the Matrix of Knowledge, shown in Fig. 1.1. This book aims to help the researcher identify the information in the fourth and most detrimental quadrant of information in the Matrix of Knowledge: the information they don't even know they're leaving out.

It assumes that the researcher has not considered sources in languages they do not speak, and therefore that information is unknown to the researcher. By applying the methods in this book and by incorporating foreign-language resources to existing research projects, the researcher will expand the aperture of their views to the most challenging quadrant in the Matrix of Knowledge.

I know what I know	I don't know what I know
I know what I don't know	<i>I don't know what I don't know</i>

Fig. 1.1 Matrix of knowledge

1.4 Establishing Research Goals and Asking a Research Question

Before making the decision to incorporate foreign-language resources into one's research, the researcher should determine the goals of the research. To determine the goals of the research is to ask a research question and hypothesize the answer. Then, the researcher can determine a methodology to answer the question and develop a data collection strategy. The acquisition of foreign-language materials should be part of the data collection strategy, but will also play a large role in the methodology: the methodology should consider the scope of the sources collected, because the incorporation of foreign-language resources itself changes the scope of the research and findings. If the researcher determines that foreign-language resources will support the answer to the research question within scope, the next question the researcher must ask is *how* and *to what extent* those sources will support the answer. The research question should capture the foreignness of the answer. They should also discuss the impact of these sources on the overall findings of the research.

Foreign-language research can either add to the answer of an already existing research question, or help the researcher generate new research questions that a researcher might not otherwise ask. The incorporation of these sources is sometimes more obvious than others. A research question such as "What does foreign country X believe about issue Y?" organically benefits from conducting research both in the researcher's native tongue, and the language spoken primarily in country X. It would be possible to answer the question only using resources from the researcher's country and in the researcher's native language, but the results will be heavily biased and one-sided.

On the other hand, consider a research question such as "How has biometrics technology altered the relationship between the government and their populations?" It would be all too easy for the researcher to answer this question using only sources from their government and only capturing the views and impact of their native population. It would also be possible for the researcher to answer this question using resources about foreign governments and foreign lands, but using resources from the researcher's country. The researcher's community will laud the researcher for a job well done, because they, too, largely see value in views from whence they came. The third option is to answer the question using resources from across the globe: these resources are often not in English, but the results will be profound and the impact much greater.

Some research questions are less obvious. Take for example the question "What are the implications of artificial intelligence technology for smart cities and individual privacy rights?" One could simply conduct research in the language they speak and find an example or two of how *their* government is implementing AI solutions *domestically*. To broaden the scope of the answer, the researcher could first identify countries other than their own who have implemented AI solutions in

their cities. For example, an American researcher will find examples of this in the United States, but upon further examination they will also find examples in China, Brazil, and Canada, to name a few. With this list, the researcher can then begin to implement the methods in this book to discover how foreign countries are implementing AI technology. The overall answer to the research question will be vastly different.

The researcher, now knowing first-hand the value of foreign-language resources, may naturally begin to look at existing issues from a more worldly lens, and may find themselves asking questions they have never asked before. They will begin to ask questions such as “How do think tanks from country X portray issue Y in comparison with think tanks from country Z?” This question demands that the foreign-language researcher identifies foreign think tanks from the country in question, locates the resources from those think tanks, interprets and understands their contents, analyzes them in a specific context, and presents their unique findings in writing.

Foreign-language research is not appropriate for every research question. With practice, the researcher will develop the ability to see how foreign-language resources can supplement their existing research strategies and preferred resources, and how foreign-language resources may even change the way they ask their research questions altogether.

1.5 Veracity of Foreign Sources

In the research community, there is no question that the source of information is paramount to the veracity of the researcher’s subsequent findings. For example, an American researcher citing solely foreign resources might not receive such positive feedback from Western critics, simply because the critics may not consider the underlying sources to be reliable or unbiased. The same can be said about the opposite: citing only sources from one perspective, and only in one language, is still limiting, even if they are sources from the author’s own native land. So, it is the researcher’s duty to capture the whole of thought on a topic, not just the thoughts and opinions of one’s own people. If this is so, then the researcher has the duty to comment on the one-sidedness of their sources, even if they are from only sources which the researcher personally deems trustworthy.

Similarly, if the researcher anticipates criticism for the use of foreign-language materials, they should clarify their choice of sources in the text. Point to the one-sidedness of other texts that discuss a similar topic, and remind the reader why they should consider alternative views from foreign sources. This will perpetuate a global culture in the research community, as the international community begins to expand upon the quality and variety of sources they use in their research.

1.6 Language Keyboards in Microsoft Windows and Apple Macintosh

While conducting foreign-language research on a computer, the researcher may decide to add a foreign-language keyboard to their computer. Keyboards are not a requirement for conducting foreign-language research: there are other techniques to aid the researcher discussed later in this book. For the ambitious researcher, this short tutorial demonstrates how to add keyboards in Microsoft Windows and Apple Macintosh operating systems. Once this is set up, it is easy to toggle between foreign scripts. The researcher is encouraged to familiarize themselves with foreign scripts, especially for languages they plan to use frequently.

1.6.1 Microsoft Windows 10

To add a keyboard in Microsoft Windows 10, access the computer Settings. In the Settings dialog box, as shown in Fig. 1.2, select “Time & Language.”

Figure 1.3 shows the “Time & Language” settings options. To add a language, select the plus symbol next to “Add a language.”

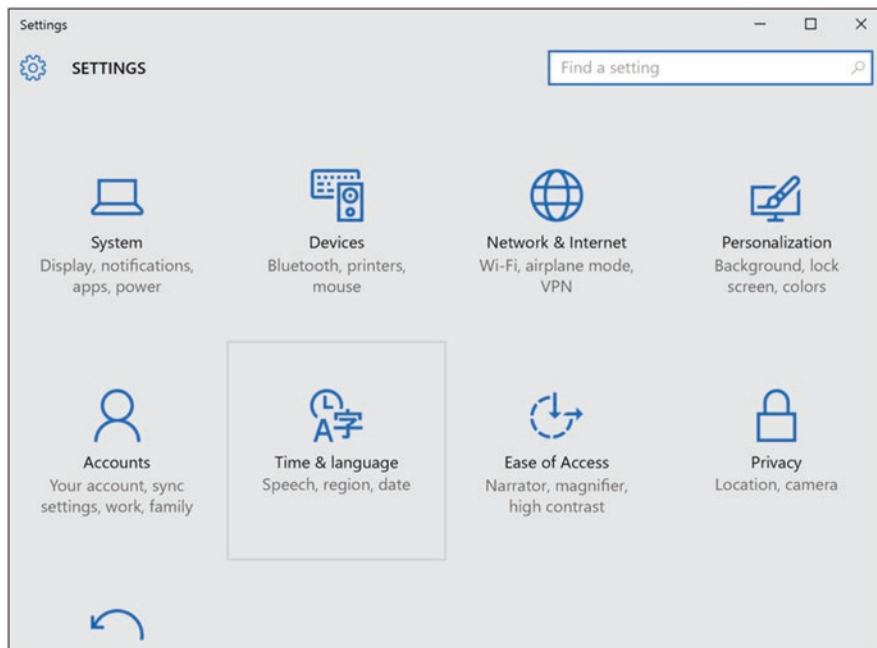


Fig. 1.2 Settings dialog box in Windows 10 © Microsoft 2021

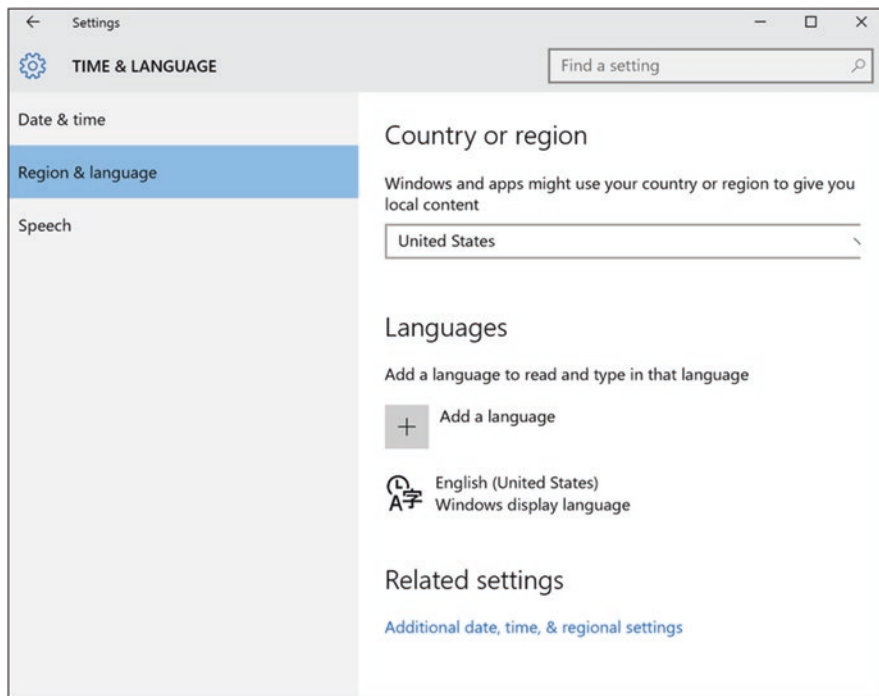


Fig. 1.3 Region and language settings in Windows 10 © Microsoft 2021

A list of languages will appear, as shown in Fig. 1.4. Select the language or languages to be added.

The list of all language keyboards added will appear in the “Time & Language” dialog box. Figure 1.5 shows the English and Armenian language keyboards added.

Upon adding multiple language keyboards in Windows 10, it is possible to view and toggle between the available keyboards directly from the Systray. In the bottom right corner of the Windows screen (where the date, internet connection, and other computer information settings options are located), a new icon should appear. Since the default language used in this example was English, the icon says “ENG.” Click on the icon, and a list of all added keyboards will appear, as shown in Fig. 1.6.

Selecting a language in the language menu in Systray will change the character input on the computer. To change the language back, simply navigate back to this menu and toggle back to the desired language.

To view the keyboard layout of the added language, search the Windows main menu for “On-Screen Keyboard.” This is demonstrated in Fig. 1.7.

Selecting the “On-Screen Keyboard” will display a new pop-up window containing the keyboard layout of the language currently selected.

Figure 1.8 shows the keyboard layout for the Armenian language. The user can type on their computer keyboard, or click on each button using the mouse. Using this method will allow the user to type any word in any language.

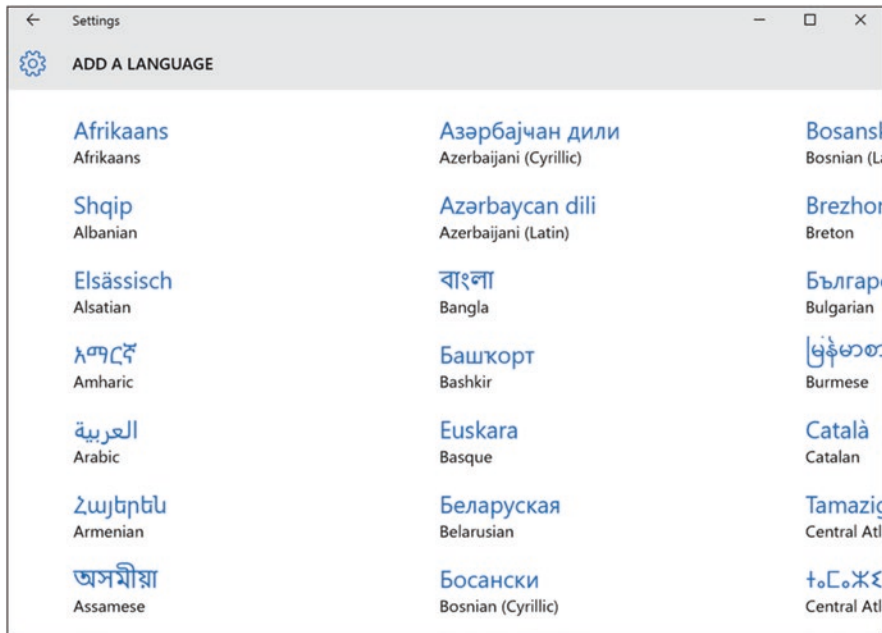


Fig. 1.4 “Add a Language” dialog box in Windows 10 © Microsoft 2021

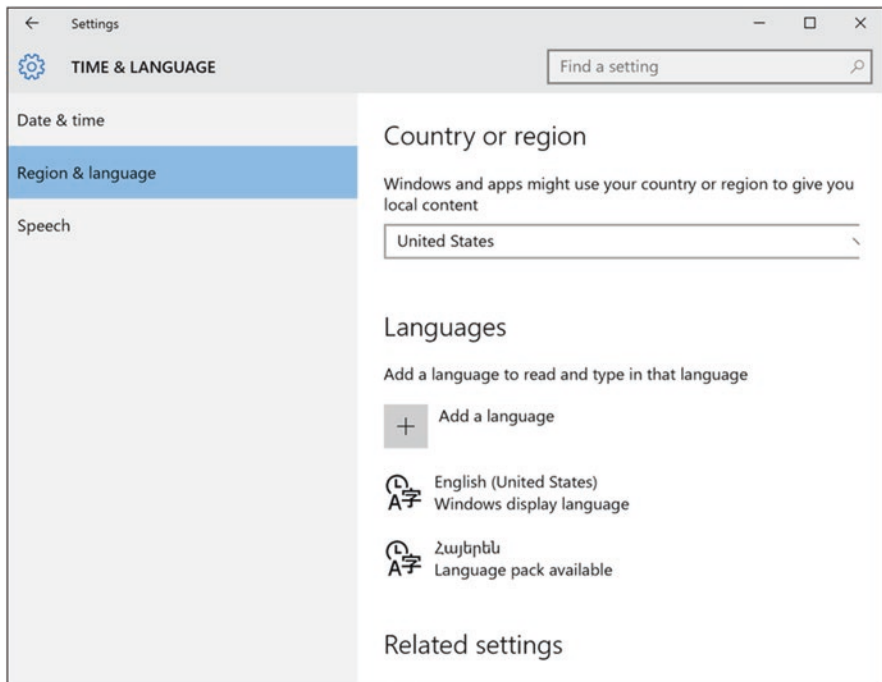


Fig. 1.5 Windows region and language settings in Windows 10 © Microsoft 2021



Fig. 1.6 Language preferences in Windows 10 © Microsoft 2021

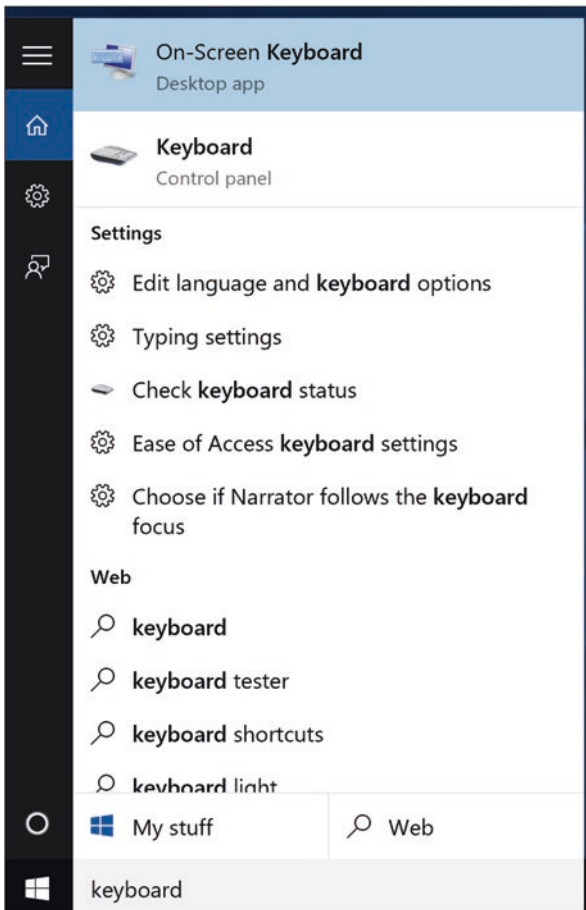


Fig. 1.7 Search for “On-Screen Keyboard” in Windows 10 © Microsoft 2021

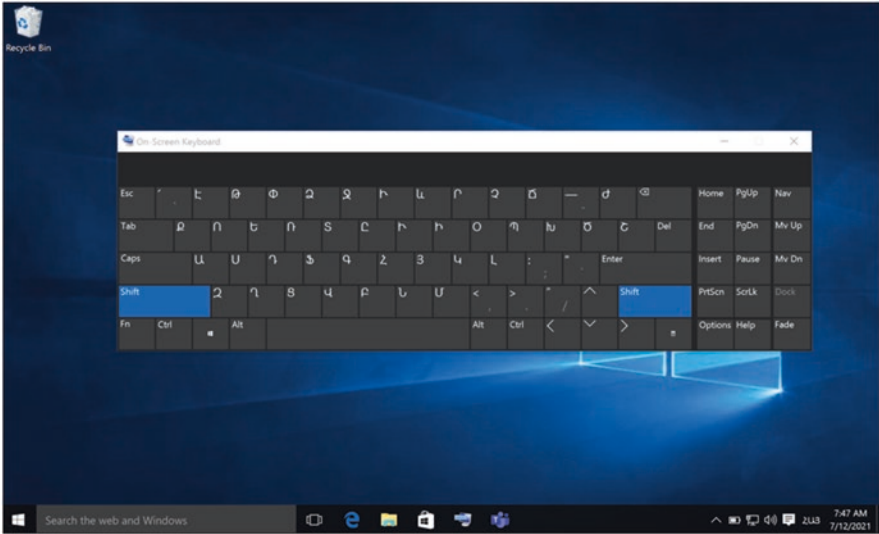


Fig. 1.8 On-Screen Keyboard feature in Windows 10 © Microsoft 2021



Fig. 1.9 Accessing system preferences on Mac © 2021 Apple Inc.

1.6.2 *Apple Macintosh*

On an Apple Macintosh computer, it is possible to add a foreign-language keyboard in the System Preferences. On the top left of the screen, select the Apple symbol as shown in Fig. 1.9. From the drop-down menu, select System Preferences.

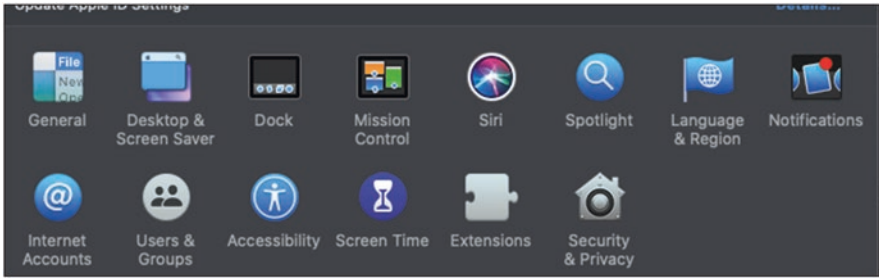


Fig. 1.10 The system preferences dialog box in Mac © 2021 Apple Inc.

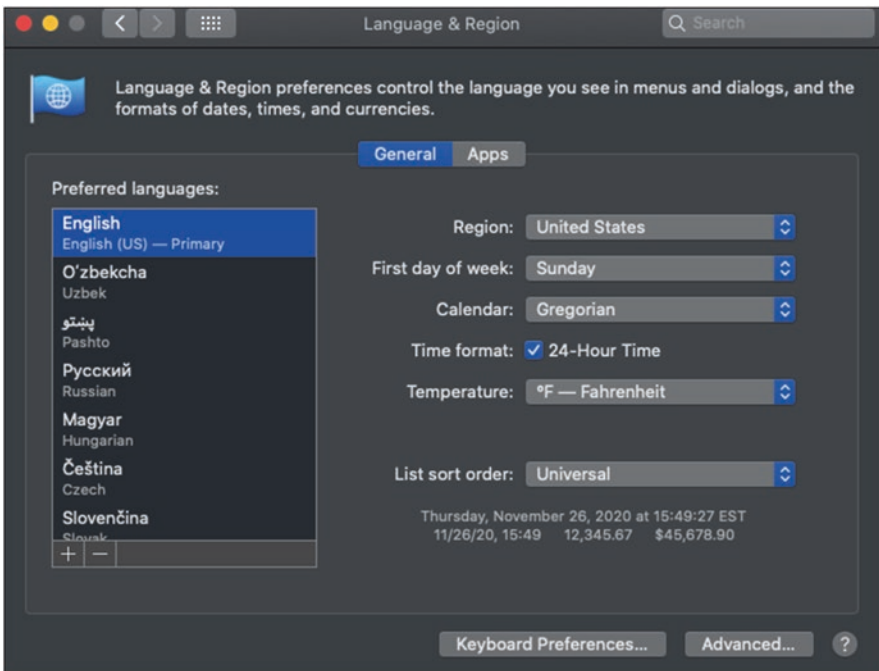


Fig. 1.11 The language and region dialog box in Mac © 2021 Apple Inc.

In the System Preferences dialog box, select “Language & Region.” Figure 1.10 shows the “Language & Region” icon in System Preferences.

In the Language & Region window shown in Fig. 1.11, the language(s) already enabled will appear in the list of preferred languages. To add a new language, click the “plus” symbol beneath the list. To delete a language from the list, simply click on the minus symbol under the list of preferred languages. No further action is required.

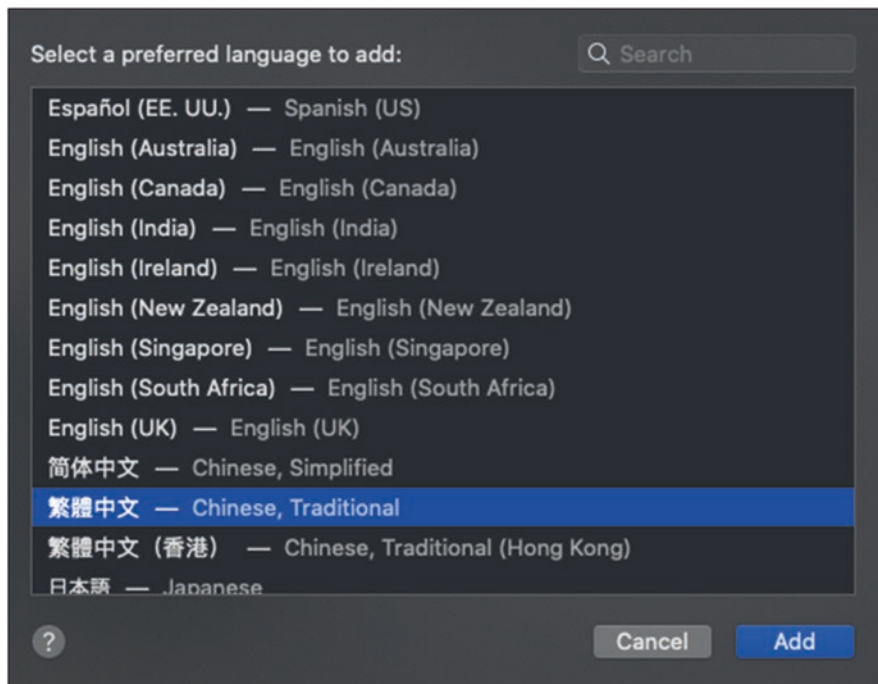


Fig. 1.12 The preferred language dialog box in Mac © 2021 Apple Inc.

After clicking the “plus” symbol at the bottom of the preferred language list, an additional drop-down menu will appear containing a list of languages to add. Figure 1.12 shows this menu. Select a language to add, or select multiple languages by holding down the “Shift” key.

After selecting the desired languages, click “Add.” The drop-down menu will disappear. The language is now added. To view the keyboard for any language, select “Keyboard Preferences...” in the Language and Region dialog box. Click on any of the languages in the list to view which characters are associated with each of the keys on the keyboard. Figure 1.13 shows the list of languages added so far, including the keyboard layout for each.

Upon adding an additional language to the list of languages, a flag will appear among the icons in the top right corner of the desktop. As shown in Fig. 1.14, the flag of the country represents the language of the current keyboard. To change the language, click on the flag and change the language in the drop-down menu. The current language will have a check mark next to it in the list.

Another useful feature in this drop-down menu is the Keyboard Viewer (Fig. 1.15). First, select the desired keyboard language, and then select the Keyboard Viewer. This will open a dialog box containing the keyboard layout for the current language. For example, selecting Russian in the list and then selecting Keyboard Viewer will display a dialog box that can help when typing in that language.

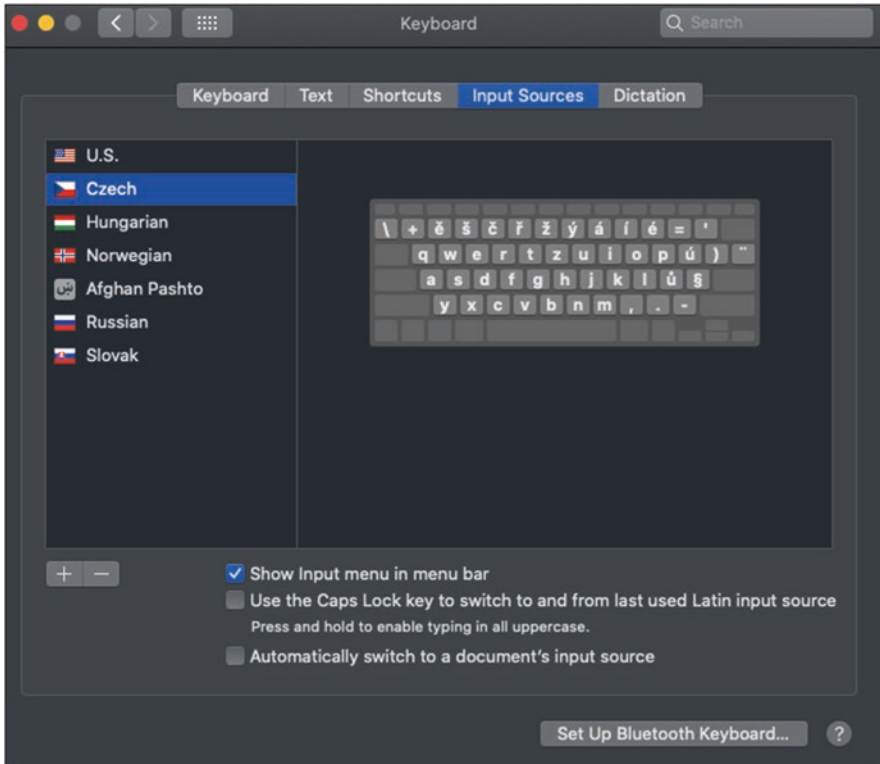


Fig. 1.13 The input sources dialog box in Mac © 2021 Apple Inc.

Fig. 1.14 The keyboard input drop-down menu in Mac © 2021 Apple Inc.

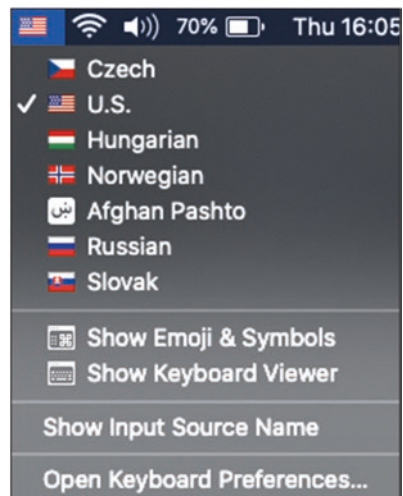




Fig. 1.15 Russian keyboard in keyboard viewer in Mac © 2021 Apple Inc.

It is also possible to type using the Keyboard Viewer by simply clicking the keyboard buttons with the cursor. This way, it is not required to type with the corresponding button on the keyboard, which can get confusing when trying to figure out which letter corresponds to which button on the English-language keyboard.

Another way to change the keyboard language is to hold down the “command” button and the space bar at the same time. Selecting this combination of keys will toggle the language back and forth between the current language and the most recently used language. If the user has multiple languages in the list, it will only toggle between these two. To use this shortcut to select a third language, hold down the “command” button and then hit the space bar multiple times. This will bring up a list of all the languages in the list in the center of the screen, as shown in Fig. 1.16.

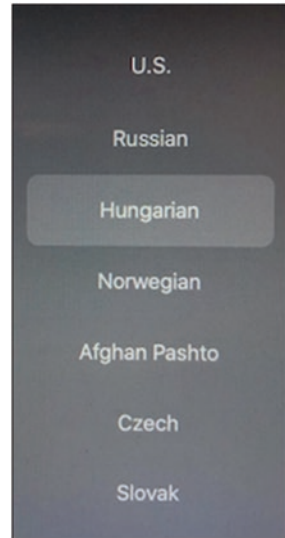
Stop selecting the space bar when the desired language is highlighted.

1.7 Virtual Private Networks (VPNs) and Geographic Restrictions

One common concern when conducting foreign-language research online is the trustworthiness of foreign websites. Since this book is largely concerned with foreign-language research online, it is imperative for the researcher to know the risks associated with visiting websites they may not normally visit.

One recommendation is to use a VPN, or Virtual Private Network, to change the researcher’s IP address. This obfuscates the apparent physical location of the researcher and makes it more challenging for the website administrator of the site the researcher is visiting to identify the researcher. *VPNs will not prevent malware*

Fig. 1.16 Changing the language input on Mac © 2021 Apple Inc.



or viruses! They only obfuscate the researcher’s identity and make it more challenging for the website administrator or web browser to track the researcher’s activity over time.

Besides privacy, another consideration for the foreign-language researcher is the location detection features within the web browser. Web browsers such as Google can detect the researcher’s location, and will return particular results based on the location (or detected location). In other words, altering the IP address using a VPN may alter the results returned in search engine queries. This is of value to the foreign-language researcher, who may be interested to know the top ten search results for a particular topic based on region.

For example, setting the location to Atlanta, Georgia in IP Vanish will return results relative to Atlanta. Searching for “restaurants near me” will return restaurants near Atlanta, even if the researcher is not physically located in Georgia.

Figure 1.17 shows the VPN set to Atlanta, Georgia; Fig. 1.18 shows the corresponding results of the search in Google with the corresponding VPN settings. The results returned include websites that discuss popular restaurants in Atlanta, even though the search parameters did not include the words “Atlanta” or “Georgia.”

The researcher will return different results if they conduct the same search for *restaurants near me* using a VPN located in Bratislava, Slovakia.

Figure 1.19 shows the VPN set to Bratislava, Slovakia; Fig. 1.20 shows the corresponding results of the search in Google with the VPN settings. The results returned include websites that discuss popular restaurants in Bratislava, even though the search parameters did not include the words “Bratislava” or “Slovakia.”