

Jacob G. Levernier

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PROFICIENCIES

LANGUAGES: R, Python, Bash, Stan, JAGS; SQL, Cypher (Neo4J Graph Databases); PHP, HTML, jQuery, CSS, SCSS; JS/ES6+ (including React and Next.js), Go

PUBLISHING: RMarkdown, R Shiny, LaTeX, CMS development (WordPress, Hugo, Pelican, Concrete5)

DATA: JSON-, XML-, and RDF-based API workflows; creating data from multiple data sources, structured and unstructured

SYSTEMS: Linux server setup and administration, Docker, Kubernetes, file encryption (PGP/GPG, LUKS, ecryptfs), database encryption and obfuscation (data perturbation, synthetic data generation, differential privacy)

AREAS OF EXPERTISE

advanced data **strategy** and **analysis, multilevel** modeling, **machine learning** for **classification**, data **architecture** and modeling, **transformation** of large datasets from multiple sources, data **management** and **security**, open-source and open-access development and **education**

DEFINING ATTRIBUTES

deep understanding of data **workflows**, vision for data **ethics** and **governance** frameworks, direct and empathetic **communication**, team-focused **leadership, creative** thinking, **translating** across disciplines

INTERESTS

data management **education**, research **ethics, privacy-promoting** data storage and analysis, authoring data workflows, **applied statistics** on disparate data, **policymaking** in data governance and security, **morality mining** (the use of data mining to learn about value and moral priorities among groups and individuals)

EDUCATION

PhD, Personality and Social Psychology, University of Oregon

Dissertation Title: "The Axiology of Necrologies: Using Natural Language Processing to Examine Values in Obituaries"

Advised by Gerard Saucier, PhD

Supporting Area in Data Science, including Data Management and Data Ethics

Advised by Sanjay Srivastava, PhD, and Brian Westra, MLIS

Graduate Certificate in New Media and Culture

MS, Psychology, University of Oregon

BA, Psychology (4.0 GPA), University of San Francisco

Minors in Neuroscience, Philosophy, Classical Studies

St. Ignatius Institute **Great Books Program Certificate**

Visiting Student Program (4.0 GPA), Blackfriars, University of Oxford, UK

Philosophy and English Literature

PROFESSIONAL HISTORY

The Children's Hospital of Philadelphia, Department of Biomedical and Health Informatics

Analyst / Programmer III
Sept. 2018 - Present

The University of Pennsylvania, Library Technology Services and Strategic Initiatives

Council for Library and Information Resources Bollinger Fellow in Library Innovation (Data Scientist)
Jan. 2017 - Sept. 2018

The University of Oregon

Teaching Fellow, Research Fellow
Sept. 2011 - Dec. 2016

The Veterans Health Research Institute / San Francisco Veterans Affairs Medical Center

Staff Research Associate II
Sept. 2010 - July 2011

Progress Foundation, San Francisco, CA

Relief Counselor
Aug. 2010 - Feb. 2010

Maureen O'Sullivan, PhD, University of San Francisco Psychology Department

Research Assistant
Aug. 2009 - May 2010

Edward Munnich, PhD, University of San Francisco Psychology Department

Teaching Assistant
Aug. 2009 - Dec. 2009

ADDITIONAL PROFESSIONAL ACTIVITIES

- **Instructor**, Data Carpentry, 2016 - Present.
- **Instructor**, Software Carpentry, 2014 - Present. Registered volunteer instructor for Software Carpentry's software and data management bootcamps, ready to teach on topics including the Unix terminal, Python, R, relational database design and SQL, version control with Mercurial and Git, regular expressions, automating data workflow, reproducible publication workflow, and related topics.
- **Research Data Management Assistant**, Science Library, University of Oregon, 2013 - 2014. Experience included developing instructional materials in support of research data management needs for faculty and graduate students in natural and social sciences, tracking changes in data management requirements and best practices for research data management, assisting in the evaluation and development of technical systems and tools for data management, assisting with depositing research data sets in the University of Oregon Institutional Repository, and supporting the University of Oregon Library System's data management advisory group.
- **Recruitment Software Architect and Lead Developer**, University of Oregon, 2012 - 2015. Led the design of and authored *MoRES* (Moral Recruitment for Ethical Studies), a PHP/jQuery/MySQL unified recruitment and participant allocation database system for Developmental Psychology research labs. The project is to be released under the GPL.

- **Lab Manager**, Imagination Research Lab, University of Oregon, June 2012 - March 2013. Experience included designing and implementing data storage and backup procedures; Research Assistant coordination tools through a private, customized WordPress system; and architecting, authoring, and implementing participant recruitment database systems.
- **Research Fellow**, University of Oregon, 2012 - 2013. Supported by John Templeton Foundation research grant as project lead on research study into children's development of mental worlds.
- **Teaching Fellow**, University of Oregon, 2011 - 2016

TEACHING AND MENTORING

I have taught **statistics and data analysis, including Bayesian modeling**, to undergraduate and graduate students; been invited to develop curricula on **programming, psychometrics, data visualization, and data science** for graduate students and professional staff; and am part of **collaborative pedagogy** organizations Software Carpentry and Data Carpentry.

My teaching and mentorship philosophy centers on building collaborative spaces where it feels **acceptable and even celebrated to not know, repeatedly and often, and to build incrementally through that into expertise**. I believe that in settings of collaboration and support, accepting the vulnerability of having to *find or build answers* yields deeper insight as **knowledge is gained through iterative practice**.

Workshops

- **Python** for Humanists (2 days, Curriculum author and sole instructor), Price Lab for Digital Humanities, University of Pennsylvania, 2017, 2018.
- **"Non-Psychometric Survey Design, Or, Creating Surveys that Measure what you Actually Want to Measure"** (1.5 hours), The Wharton School Customer Analytics Initiative, University of Pennsylvania, 2017.
- **Data Visualization Best Practices** (1.5 hours), The Wharton School Customer Analytics Initiative, University of Pennsylvania, Mar. 2017, Aug. 2017. In collaboration with Manuel de la Cruz Gutierrez, PhD
- Software Carpentry workshop (1 day, **Bash, Python**), Price Lab for Digital Humanities, University of Pennsylvania 2017.
- **Python** for Humanists (3 days), Price Lab for Digital Humanities, University of Pennsylvania, 2017.
- **Project Management** best practices (1 hour), CLIR Postdoctoral Program webinar, 2017. In collaboration with Kieran Healy, PhD
- "Building **Book Scanners** without Breaking the Bank" (1.5 hours), introduction to hardware engineering and software availability for creating document and book scanners
 - *Ms. Fembot* un-conference event, sponsored by the Fembot Collective and *Ms. magazine*, University of Southern California Annenberg School for Communication and Journalism, 2016
 - Digital Scholarship Center, University of Oregon, 2015
- **"R for Librarians in the Humanities"** (3 hours), Digital Scholarship Center, University of Oregon, 2015
- "An introduction to **R** for the Digital Humanities" (1 hour), Digital Scholarship Center, University of Oregon, 2015
- "Time Travel for Academics: Get Your Digital Life in Order, and Protect Yourself from Yourself" (one hour), introduction to **version control with Git**
 - University of San Francisco (Psychology), 2015
 - University of Oregon Methods Laboratory (Psychology, Biology, and Neuroscience), 2015

Lecturing and Instructing

- Graduate Student **Python** Learning Group (Lecturer, Mentor), University of Pennsylvania Libraries and Price Lab for Digital Humanities, Jan. 2018 - Present
- **R** Learning Group (Administrator, Lecturer), University of Pennsylvania Libraries, 2017 - Present
- **Advanced Data Analysis** (512 Course number, for graduate and Honors undergraduate students), University of Oregon, 2015, 2016
- **Research Methods**, University of Oregon, 2012, 2014, 2015, 2016; University of San Francisco, 2011
- **Graduate Statistics** (612 Course Number), University of Oregon, 2015

- Guest Lecturer on **Bayesian Modeling**, Graduate Statistics (612 Course number), University of Oregon, 2014, 2015
- **Bayesian Modeling in R** Club (Co-Founder, Administrator, Lecturer), University of Oregon, Jan. 2014 - June 2014
- **Moral Development**, Child Development, University of Oregon, 2012, 2013
- **Motivation, Emotions, and Personality Traits**, University of Oregon, 2011
- **Writing**, St. Ignatius Institute, University of San Francisco, 2009

AWARDS AND HONORS

- **Graduate Affiliate**, Digital Scholarship Center, University of Oregon, 2014 - 2016
- **Gregores Graduate Research Award** to fund training in Bayesian analyses, University of Oregon, 2013
- **John Templeton Foundation research grant**, "Children's imaginary worlds and the development of creativity and moral judgment," with Marjorie Taylor and Candice Mottweiler, 2012 - 2014
- **Graduate School Research Award**, University of Oregon, 2012
- **Marthe E. Smith Memorial Science Fellowship**, University of Oregon, 2012
- **Valedictorian in Arts and Social Sciences**, University of San Francisco, 2010
- **Dean's Medalist in Arts**, University of San Francisco, 2010. First USF student in 13 years to be both Valedictorian and Dean's Medal recipient
- **Fr. Hubert Flynn, SJ, Award**, University of San Francisco, 2010, for maintaining highest cumulative GPA in graduating class
- **Vice-President, Psi Chi, International Honor Society in Psychology**, University of San Francisco Chapter, 2009 - 2010. Member of University of San Francisco Psi Chi Chapter, 2007 - Present. Chapter distinguished with Regional Model Chapter Award during time in office
- **Member of Alpha Sigma Nu** National Jesuit Honor Society, 2008 - Present
- **Recipient (twice) of Fr. Urban Grassi Award**, highest honor granted by Rhetoric and Composition Department, University of San Francisco, for writing in Psychology, 2007, 2008
- **Member of National Society of Collegiate Scholars**, 2007 - Present
- **University Scholar**, University of San Francisco, 2006 - 2010
- **Dean's List**, University of San Francisco, 2006 - 2010

PROFESSIONAL PRESENTATIONS AND PUBLICATIONS

- Taylor, M., Mottweiler, C.M., Aguiar, N.R., Naylor, E.R., & Levernier, J.G. (2020). "Paracosms: The Imaginary Worlds of Middle Childhood." *Child Development* 91(1), e164-e178. doi: 10.1111/cdev.13162.
- Wacha, Heather, and Jacob Levernier (2019). Cartography and code: Incorporating automation in the exploration of **medieval mappaemundi**. *Digital Medievalist* 12(1): 4, pp. 1–29. <https://doi.org/10.16995/dm.84>
- Alfano, M., Higgins, A., & Levernier, J.G. (2019). Mapping **human values**: Enhancing **social marketing** through obituary data-mining. In L. Kahle & E. Attay (eds.), *Social and Cultural Values in a Global and Digital Age*.
- Levernier, J.G. (2018, October). *Creating self-updating reports from 5 to 5000 datapoints: Using R and R Markdown in a library workflow*. Talk presented at Digital Library Federation Forum conference, Las Vegas, Nevada.
- Ahnberg, K. (Presenting), Armstrong, D.R., de la Cruz Gutiérrez, M., Larrivee, A., Levernier, J. (Presenting), & Sarno, A.L. (2018, October). **Data Stewardship and Patron Privacy: Facilitating action within your library**. Talk presented at Digital Library Federation Forum conference, Las Vegas, Nevada.
- Wacha, H. & Levernier, J.G. (2018, May). *Incorporating automation in the exploration of medieval mappaemundi using the veccompare package for R*. Invited talk for the Library of Congress' *Topics in Preservation Series*.
- Alfano, M., Higgins, A. & Levernier, J. (2018). Identifying **virtues and values** through obituary data-mining. *Journal of Value Inquiry*. doi:10.1007/s10790-017-9602-0.
- Himmelstein, D.S., Romero, A.R., Levernier, J.G., Munro, T.A., McLaughlin, S.R., Greshake Tzovaras, B., & Greene, C.S. (2018). **Sci-Hub** provides access to nearly all scholarly literature. PeerJ Preprints,

6:e3100v3.

<https://doi.org/10.7287/peerj.preprints.3100v3>

- Levernier, J.G., Borghi, J., Quinless, J., & Thompson, M.S. (2017, October). *Surveying the landscape of **data governance and ethics***. Panel discussion, Digital Library Federation Forum conference, Pittsburgh, Pennsylvania.
- Levernier, J.G. (2017, October). *Photographing books at an intentional keystone using **fiducial markers***. Lightning talk presented at the Digital Library Federation Forum conference, Pittsburgh, Pennsylvania.
- Wacha, H.G., & Levernier, J.G. (2017, September). *Cartography and code: Incorporating automation in the exploration of **medieval mappamundi***. Paper presented at *BH & DH: Book History and Digital Humanities: A conference for the history of print & digital culture*.
- Levernier, J.G. (2016). *The Axiology of Necrologies: Using **Natural Language Processing** to Examine **Values** in Obituaries* (Dissertation). University of Oregon.
<http://hdl.handle.net/1794/22282>
- Alfano, M., Iurino, K., & Levernier, J.G. (2015, May). *Constructing and Validating a **Scale of Intellectual Humility***. Presentation at John Templeton Foundation *Intellectual Humility* conference.
- Taylor, M., Mottweiler, C.M., Naylor, E.R., & Levernier, J.G. (2015). ***Imaginary worlds** in middle childhood: A case study of two pairs of coordinated paracosms*. *Creativity Research Journal*. doi:10.1080/10400419.2015.1030318
- Levernier, J. G., Alfano, M., & Higgins, A. (2015, February). *Speaking Well of the Dead*. Poster presented at Society for Personality and Social Psychology conference.
- Eanes, R., Pittman, M., & Levernier, J. G. (2015, February). *Secrets in Plain Sight: **Mining Datasets** in the Social Sciences*. Panel discussion on data ethics, Graduate School Research Forum, University of Oregon.
- Levernier, J. G. (2014, February). *The Dirt on Data: **Data Management Fundamentals***. Poster presented at Graduate School Research Forum, University of Oregon.
- Alfano, M., & Levernier, J. G. (2013, December). *Speaking Well of the Dead*. Presentation invited by San Francisco State University Department of Philosophy.
- Levernier, J. G., Mottweiler, C. M., & Taylor M. (2013, July). *The Creation of **Imaginary Worlds** in Middle Childhood*. Paper presented at *Making Sense of: Play*, an Inter-Disciplinary.Net conference.
- Levernier, J. G., Magid, A. J., Kloeris, M. P., & O'Sullivan, M. (2010, April). *Upon My Soul, a Wicked Lie: **Emotional Reactions to Lying***. Poster presented at Western Psychological Association conference.
- Delegate, National Conference on **Ethics** in America, United States Military Academy, West Point, NY, 2009. Selected by Dean of College of Arts and Sciences as the sole representative of University of San Francisco at the United States Military Academy's undergraduate conference on Ethics.

Software

- Levernier, J.G. and Wacha, H.G. (2017). *veccompare: Perform Set Operations on Vectors, Automatically Generating All n-Wise Comparisons, and Create Markdown Output*. R package version 0.1.0.
<https://github.com/publicus/r-veccompare>
- Levernier, J.G. (2017). *org-mode for the laity (**Emacs** configuration)*.
<https://github.com/publicus/emacs-org-mode-for-the-laity>
- Levernier, J.G. (fork of project by Y. Tsutano) (2017). *Voussoir: A single-camera solution for **book scanning***.
<https://github.com/publicus/voussoir>
- Levernier, J.G. (contributor, maintainer) (2016). *A **LaTeX** stylesheet for **dissertations***.
<https://github.com/publicus/unofficial-uoregon-grad-school-dissertation-latex-markdown-apa-format>
- Levernier, J.G. (2015). *Video **privacy** enhancer (plugin for Pelican)*.
https://github.com/publicus/pelican-plugins/tree/master/video_privacy_enhancer
- Levernier, J.G. (2015). *Better **codeblock line numbering** (plugin for Pelican)*.
https://github.com/publicus/pelican-plugins/tree/master/better_codeblock_line_numbering
- Levernier, J.G. (2014). *Markdown Mapper: Generate **concept maps** from plaintext notes*.
<https://github.com/publicus/Markdown-Mapper-R>
- Levernier, J.G. (2014). *Qualtrics graph helper: A PHP Class for easily **scoring and graphing responses** for participants of Qualtrics surveys*.

https://github.com/publicus/qualtrics_graph_helper

Datasets

- Wacha, Heather G., and Jacob G. Levernier. (2017). Toponym Sets for **Medieval Mappamundi**, transcribed and normalized (version e25c8) [Data file].
https://www.github.com/publicus/medieval_mappamundi
- Levernier, J.G. (2016): The Axiology of Necrologies: Using **Natural Language Processing** to Examine **Values** in Obituaries (Dissertation Code and Limited Data). University of Oregon. Software.
<http://doi.org/10.7264/D3WC7S>

Hardware

- Levernier, J.G. (2017). "Impost" **book scanner** design (released under a Creative Commons CC0 dedication).
<https://adunumdatum.org/post/an-introduction-to-the-impost-book-scanner>
- Levernier, J.G. (2017). "Non-Destructive Guillotine" **book scanner** design (released under a Creative Commons CC0 dedication).
<https://adunumdatum.org/post/an-introduction-to-the-non-destructive-guillotine-ndg-book-scanner>