

Matthew Bauerlin – Curriculum Vitae

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Education

2020-Pres. MS in Geography - Pennsylvania State University, University Park, PA

2013-2016 BS in Computer Science - Clemson University, Clemson, SC
GPA: 3.61 / 4.0

- Minor in Geography
- Graduated with Departmental and General Honors
- Member of the Calhoun Honors College
- Completed Undergraduate Honors Thesis:
A Programmatic Analysis of Source Identification in Print Journalism

2012-2013 BS in Computer Science - University of South Carolina, Columbia, SC

- Transferred to Clemson University to Complete Degree

Experience

Teaching

Aug 2020 - Present **Apocalyptic Geographies: How Can We Prevent the End of the World?**
Teaching Assistant

- Responsible for developing lesson plans, teaching, and grading for four discussion sections of twenty five students each
- Assisted with assignment and test construction, addressing student concerns, and assisting with remote class administration

Research

Aug 2015 - May 2016 **Humans and Technology Laboratory (HATLab) - Clemson University**
Undergraduate Researcher

- Conducted research on programmatically identifying how English language print journalists cited anonymous and named sources within articles.
- Analyzed a corpus of over 6500 newspaper stories published by four different international news agencies using natural language processing to tag named sources within the text as well as other techniques to match common words and phrases used by authors when identifying unnamed sources
- Tagged data were further analyzed using Hadoop MapReduce and other programming techniques to process the large volume of text as to determine what type of and how many sources were named in each article.
- The summary information generated by this program was then used to draw conclusions about the corpus analyzed. These conclusions were intended to be a starting place for using similar techniques to analyze larger data sets

Topics of Interest

■ Political Ecology

- The intersection of environmental and economic geography. Specifically the impacts of climate change on the poor and working class in the United States.
- How precarious populations are particularly impacted by both through increasingly destructive environmental factors like wildfires, floods, and hurricanes and the societal ones which follow in their wake such as refugee migration, disaster capitalism.
- The spatial distribution of environmental features and hazards in the urban landscape and their economic consequences such as green gentrification and the impact of industrial pollutants on nearby populations
- Researching edge effects on the rural-urban fringe and their consequences for the human, animal, and plant populations that inhabit it

■ Economic Geography

- Economic effects of access to affordable, convenient, and frequent public transit services on the communities they serve
- Impact of rural depopulation on the availability of employment and public services in the regions affected
- The impact of environmental issues on labor

■ GIS, Technology, and Programmatic Mapping

- Developing new methods to democratize cartography, GIS, and geospatial information gathering by utilizing programmatic methods to process and display crowd sourced data
- Determining how the proliferation of geographic technologies impact the way that people and organizations interact with the spaces around them. *e.g.* How real time GPS traffic routing causes issues with congestion and pollution in traditionally residential or otherwise lightly traveled areas
- The interaction between digital and physical geographies

Employment History

May 2016 - Present - **Raytheon Codex (formerly Teligy), 10 Patewood Drive, Suite 200, Greenville, SC**
Software Engineer 2

- Worked on a team to develop and maintain a multiple architecture emulator and its various user and programmatic interfaces.
- This emulator provides the capability to pause, rewind, and replay execution of the virtual system, including non-deterministic events such as user input, while allowing the user to examine register contents, the instruction being executed, and other fine-grained system information
- Developed a browser based data analytics dashboard which displays user configured graphs and tables generated from an aggregate of the raw data collected from aircraft cyber anomaly detection systems.
- Developed remote server application, a shell to allow user interaction, and the associated communication protocol and data serialization scheme required for quick and simple interfacing with the underlying server capabilities

May - Aug 2015 - **Dynetics, 1002 Explorer Blvd NW, Huntsville, AL**
Software Development Intern

- Worked on a two person development team to set up a full stack, data analytics dashboard for cyber security experts to view thousands of logs and associated alert information from remotely deployed intrusion detection and monitoring suites
- Developed data pipeline and a database storage solution to ensure all logs from several off-site servers were collected at a central locally hosted location
- Assisted fellow developer with design, hosting, and implementation of the associated web dashboard

May - Aug SCANA (now Dominion Energy), 100 Scana Parkway, Cayce, SC 29033
2013 & 2014 Summer Intern

- Worked with the Security Administration Team in implementing department wide policy changes regarding password security measures
- Rectified errors in the server information repository to ensure server access was granted on an as needed basis

Software Engineering Skills

■ Programming Languages

C, C++
Python
Bash, Batch - linux and windows scripting
Java - Hadoop MapReduce for processing large volumes of data
ARM, x86 - assembly languages

■ Web Development

HTML5, CSS
JavaScript/jQuery
Leaflet, Google Maps - browser plugins for creating interactive maps
Bootstrap - web framework
Kibana - data visualization dashboard

■ Miscellaneous

SQLite, Elasticsearch - experience with multiple database models
Git, SVN - source control and versioning
Make, SCons, Crosstool-NG - experience creating and maintaining build environments.
QT - graphical user interface framework (C++/Python)

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Extracurricular Activities

■ Community Radio

- Involved in radio production from 2012 to 2020
- Volunteer DJ at Clemson's college and community radio station, **WSBF-FM**
- Hosted *Highway 61*, a radio show focused on blues and soul music and other closely related genres
- *Highway 61* attempts to examine the cultural, musical, material and geographical origins of these musical styles while also tracking their evolution to the present day.
- Delving into the stories, people, and places behind the music to give listeners a better context and appreciation for its messages and for the impact it has had on the American zeitgeist

■ Film Photography

- Focus on concert and street photography
- Experience with digital photo editing
- Experience with experimental film techniques such as multiple exposures and intentional overexposure for artistic purposes

■ Analog Media

- Collects and digitizes analog media
- Focus on preserving VHS and other found footage
- Secondary focus on rare music that only exists on records or tapes
- Intent to document and catalog media that might otherwise be lost to time

References

Name Christa Smith, Ph.D.
Position Associate Professor of Geography, Clemson University
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Name William Terry, Ph.D.
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