Devin R. Wright

CONTACT
INFORMATION

Indiana University – Bloomington

devrwrig@iu.edu
Homepage
Google Scholar
GitHub

1001 E 10th St. 3rd Floor 3045C
Bloomington, IN 47405

EDUCATION

Joint Ph.D., Cognitive Science & Informatics   August 2022 – Present
Complex Networks and Systems Track
Indiana University, Bloomington, IN, USA
B.S., Computer Science   December 2021
Utah Valley University, Orem, UT, USA
A.S., General Studies   April 2017
Brigham Young University – Idaho, Rexburg, ID, USA
California State University Long Beach, Long Beach, CA, USA
        Vocal Performance, Aug 2010 – Dec 2010

CERTIFICATIONS **Programmer**   August 2021
Utah Valley University, Orem, UT, USA

PUBLICATIONS   [†]: equal contribution
Journal Articles

J1.   [†]Breithaupt, F., [†]Otenen, E., [†]Wright, D. R., Kruschke, J. K., Li, Y. & Tan, Y. Humans create more novelty than ChatGPT when asked to retell a story. *Scientific Reports* (2024).

Peer-reviewed Conference Proceedings

C1.   Wright, D. R., Severance, T., Knutson, C. D., Krein, J. L. & Buchanan, T. D. An autonomous discord bot to improve online course experience and engagement: Lessons learned amid the covid-19 pandemic. *Proceedings of the IEEE Conference on Software Engineering Education and Training (CSEE&T). Maui, Hawaii* (2022).

Preprints

P1.   [†]Wright, D. R. & [†]Beavers, A. F. Encountering the Other in the Cognitive Science of Religion. In preparation. (2024).

P2.   Wright, D. R., An, J. & Ahn, Y.-Y. Linguistic Identity Fusion Evaluator: A Mixed LLM and ML Approach to Domain-General Detection of Identity Fusion in Text. In preparation. (2024).

P3.   Jing, E., DeDeo, S., Wright, D. R. & Ahn, Y.-Y. Sameness Entices, but Novelty Enchants in Fanfiction Online. *arXiv preprint arXiv:1904.07741* (2023).

PRESENTATIONS **Talks**

1.   Otenen, E., Wright, D. R., Tan, Y., Kruschke, J., Li, Y. & Breithaupt, F. Man vs. Machine: What ChatGPT Reveals about Human Memory, Emotion, and Creativity in the Serial Reproduction of Stories. *Midwest Cognitive Science Conference. Grand Rapids, Michigan* (2023).

2. Wright, D. R. & Cruz-Ortiz, G. E. Using Natural Language Processing and Machine Learning to Identify Trends in Flight Software Patch History. *NASA Virtual Intern Symposium, Summer 2021. Virtual–Greenbelt, Maryland* (2021).

3. Wright, D. R. & Welborn, C. R. Constructing an Assembler and Virtual Machine. *Utah Conference on Undergraduate Research 2021, hosted by Brigham Young University. Virtual–Provo, Utah* (2021).

Posters

1. Wright, D. R. Exploring the Impact of Factually Erroneous Cultural Mental Models on Community Understanding. *9th Biennial Meeting of the International Association for the Cognitive and Evolutionary Sciences of Religion. Oxford, United Kingdom* (2024).

2. Wright, D. R. & Welborn, C. R. Constructing an Assembler and Virtual Machine. *National Conference on Undergraduate Research 2021@home. Virtual* (2021).

3. Wright, D. R., Frank, J. & Dalal, M. Improving Plan Specification Language Usability and Applying Language to Model Autonomous Interplanetary Communications. *Ames Virtual Intern Poster Symposium and Exit Presentation Series. Virtual–Mountain View, California* (2020).

RESEARCH
INTERESTS

The cognitive science and evolution of culture, stories, and religion.

How does cultural evolution drive the evolution of narratives and vice versa?
What is the role of narrative in identity fusion?
How do stories, identity, and ontological concepts affect the phenomenology of reality?

Patterns of novel thinking, collaboration, information spreading, and cooperation.

Aim to understand how narrative structures or ritual practices affect these patterns in social/collective/individual cognition.

Natural Language Processing, Understanding (NLP/NLU), and Culturomics

Research how concepts from cognitive science, information theory, embedding methods, machine learning (ML), artificial intelligence (AI), large language models (LLM), digital humanities, and network science can help us develop novel culturomics and NLP/NLU methods for cultural narrative analysis.

RESEARCH
POSITIONS

IU Luddy School of Informatics, Computing, and Engineering, Bloomington, IN

Research Assistant   August 2024 – Present

Research regarding information resonance with existing belief systems and information propagation. Developing novel methods for the automated evaluation of identity fusion in individuals and groups using AI, ML, and LLM methods. Funded through the *Air Force Research Laboratory (AFRL). Research conducted under Professor Yong-Yeol Ahn (PI).*

Research Assistant Volunteer   August 2021 – April 2022

Belief networks and complex/simple contagion models. Research conducted under Professor Yong-Yeol Ahn and Rachith Aiyappa.

Ironwood Experts, LLC, Lehi, UT

Research Associate   April 2021 – June 2021

Led a team of three undergraduate researchers at Utah Valley University under the advisement of Professor Charles Knutson and Dr. Jonathan Krein. Our primary research was on the development of automated and asynchronous attendance-tracking

methods for remote learning. We also researched their benefits to student behavioral engagement within university computer science courses. This research resulted in a paper published at CSEE&T in January 2022.

UVU Source Code Lab, Orem, UT

Research Assistant Volunteer   October 2019 – December 2021

Charter member – Recruited several original members.

Assisted in obtaining funding through an Ironwood Experts, LLC Research Associate internship program by demonstrating the need to improve online course experience and engagement during the COVID-19 pandemic.

INDUSTRY	**Serve-AI**
POSITIONS	**Laurie Burns McRobbie Serve IT Clinic**

Luddy School, Indiana University, Bloomington, IN   Bloomington, IN

Team Lead   May 2024 – August 2024

Lead project regarding public-interest technology for Serve AI (focused on Artificial Intelligence technologies). Done in collaboration with the Public Interest Technology University Network (PIT-UN).

NASA Goddard Space Flight Center
Universities Space Research Association, Greenbelt, MD

OSTEM Intern – Data Scientist   June 2021 – August 2021

- Used Machine Learning and Natural Language Processing methods to identify development patterns within flight software patch history.
  - Topic Modeling (Latent Dirichlet Allocation)
- Developed a web scraper to obtain 30 years of patch comment data left by NASA engineers over approximately 30 missions from HTML.
- Used Python, Pandas, and Scikit-learn to analyze and visualize the data.
- Used Docker containers to make the NLP/ML development environment easy to set up for other engineers.
- Worked on the NASA core Flight System (cFS). Researched and implemented some caching within the CI pipeline to speed up performance between jobs in GitHub Actions.

NASA Ames Research Center
Universities Space Research Association, Mountain View, CA

Summer Intern – Computer Scientist   May 2020 – August 2020

OceanWATERS

Ocean Worlds Autonomy Testbed for Exploration Research and Simulation:

- Developed and modeled autonomous interplanetary communications simulations using the Robot Operating System (ROS) and PLEXIL.
- Implemented simple simulation parameters to control simulation time and decisions on the ground.
- Researched how to speed up overall simulation time to run simulations lasting multiple sols.
- Worked on Windows Subsystem for Linux (WSL) compatibility with OceanWATERS.

PLEXIL

Plan Execution Interchange Language:

- Worked on improving the language, which was originally developed by researchers at NASA and Carnegie Mellon University.
- Developed a custom editing support extension in Emacs for the PLEXIL language.
- Translated LISP-based PLEXIL apps to standard PLEXIL syntax.
- Refactored sample application to use C++ style programming and some simple design patterns.
- Worked on WSL compatibility with PLEXIL.
- QA and software testing of PLEXIL and its various applications.

<table>
<tr><td>Teaching experience</td><td></td><td></td></tr>
</table>

Instructor of Record	
UVU Computer Science Department, Orem, UT	
Adjunct Faculty Instructor	December 2021 – August 2022

Summer 2022

CS 2810: Computer Organization and Architecture
CS 2420: Introduction to Algorithms and Data Structures
CS 2370: C++ Programming

Spring 2022

CS 2810: Computer Organization and Architecture

Student Academic Appointee

IU Luddy Informatics Department, Bloomington, IN	
Associate Instructor	August 2022 – August 2024

Summer 2023 & 2024

DSCI-D590: Data Visualization

Spring 2023 & 2024

INFO-I123: Data Fluency

Fall 2023

INFO-I222: The Information Society

Fall 2022

DSCI-D590: Data Visualization
INFO-I590: Data Visualization
INFO-I422: Data Visualization

Assistant

UVU Computer Science Department, Orem, UT	
Teaching Assistant	August 2019 – December 2021

Fall 2021

CS 4490: Compiler Construction
CS 305G: Global Social and Ethical Issues in Computing

Spring 2021

CS 3450: Principles and Patterns of Software Design
CS 305G: Global Social and Ethical Issues in Computing

Spring 2020, Fall 2019 & 2020

CS 2810: Computer Organization and Architecture

SERVICE	**Journal Reviewer:** Nature: Humanities & Social Sciences Communications (2023); **Conference Reviewer:** Hawaii International Conference on System Sciences HICSS-56 (2022);

PROFESSIONAL AFFILIATIONS

Research Labs:

YY Group
Experimental Humanities Lab

Memberships:

The Association for Computational Linguistics (ACL)
The Cognitive Science Society (CSS)
International Association for the Cognitive and Evolutionary Sciences of Religion (IACESR)

HONORS & AWARDS

Scholarships and Funding

Joint PhD Funding .... 2022 – Present

Awarded by the Luddy School of Informatics, Computing, and Engineering at Indiana University Bloomington. Includes tuition remission, health insurance, stipend, and travel funding for research conferences.

Bob Cole Conservatory of Music Scholarship 2010

Awarded for vocal performance ability with purpose to study music at California State University Long Beach.

Miscellaneous Awards

Dean's List .... Multiple

Spring 2021, Fall 2020, Spring 2020, Fall 2019, and Fall 2018.

Finalist in Last Voice Standing at BYU-I (Jul 2015) 2015

Finalist in a competition against other vocalists where each week contestants were given a different vocal challenge.

IN THE PRESS

Media Coverage of my Research

Generative AI and Human Cognition *News-Medical (Jan 2024)*; *PsyPost (Jul 2024)*

LANGUAGES

English:

Native

Portuguese

Fluent reading, writing, and speaking. Lived in Brazil for just over a year.

OTHER SOFTWARE EXPERIENCE

Virtual Machine and Compiler Construction

Constructed a virtual machine and compiler for a custom object-oriented programming language called *kxi*. Language is capable of functions, recursion, objects, arrays, statements, and expressions using various data types. Language compiles to bytecode and runs on a custom virtual machine built from scratch. The VM has a RISC-based instruction set and a stack-based architecture. Capable of multithreading. Work on VM was presented at one state-level and one national-level conference.

Grad "Fit" Finder

Constructed a simple program to help students find and choose graduate programs that best "fit" them. The program takes into account the student's preferences and values. I

used this to help me choose my own graduate program. Eventually, I hope to release it as an open-source tool for students with less academic privilege.

OTHER WORK EXPERIENCE	**Canvasser**	Jan 2018 – Apr 2018

Grassroots Utah Strategies Inc. - Better Boundaries, Salt Lake City, UT, USA

> Gathered signatures for Better Boundaries petition. Informed voters on the issue at hand and offered the opportunity to sign the petition. Efforts were successful as the issue was placed on voting ballots in 2018.

Field Investigator   Aug 2017 – Dec 2017

Resources West Investigations, Clovis, CA, USA

> Researched and investigated workers' compensation claims.
> Produced detailed reports on facts and observations with respect to claim validity.

Construction Worker   Oct 2016 – Jul 2017

Wheelhaus, Salt Lake City, UT, USA – Construction Site: Idaho Falls, ID, USA

> Built tiny homes – trim, framing, flooring, cabinetry, gas lines, etc.

Field Investigator   Apr 2008 – Aug 2016

Resources West Investigations, Clovis, CA, USA

> Researched and investigated workers' compensation claims.
> Produced detailed reports on facts and observations with respect to claim validity.
> (Remained at the company, but did not work here during volunteer missionary service.)

VOLUNTEER EXPERIENCE	**Missionary**	Apr 2013 – Mar 2015

The Church of Jesus Christ of Latter-day Saints, Salt Lake City, UT, USA

> St. George, Utah - Apr 2013 – Mar 2014
> São Paulo, Brazil - Mar 2014 – Mar 2015
>
> *St. George, Utah:* Regional Director: Responsible for training, developing and managing four teams of volunteers. Performed, organized, and led volunteer humanitarian and faith-based service in the form of community outreach, charitable support, compassionate care for the elderly and sick, and education and awareness.
>
> *São Paulo, Brazil:* Regional Director: Responsible for three teams of volunteers.

English Tutor/Teacher (Brazil)

> Volunteered to teach free basic English courses to classes ranging from 10-25 persons.

OTHER INTERESTS	Besides vocal performance, plays guitar, bass, and drums. Dabbles in other instruments such as piano, ukulele, cavaquinho, and mandolin. Experience in recording/mixing/mastering music. Enjoys building and modifying desktop computers.

Last updated: February 12, 2025