

Tarun Sepuri

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EDUCATION

Case Western Reserve University

Cleveland, OH

Bachelor of Arts in Cognitive Science, Bachelor of Science in Computer Science

Aug 2019 – May 2023

GPA: 3.9/4.0 | *Magna cum laude*

Courses: Cognition and Computation, Cognitive Linguistics 1 and 2, Cognitive Neuroscience, Natural Language Processing, Second Language Acquisition, Machine Learning, Ethics of AI, Software Craftsmanship

RESEARCH EXPERIENCE

Research Assistant

May 2021 – May 2023

Case Western Reserve University

Cleveland, OH

- Analyzed effects of an artificial intelligence agent on the skill development of 121 participants with Python
- Created a spatial navigation website with Flask and JavaScript for an **NSF funded study**
- Designed automated longitudinal study system reducing labor by 95% and saving \$100 per 90 participants
- Established a template for this system using JavaScript to be used at CWRU and Emory for over 500 participants

PUBLICATIONS

Nelson, N., **Sepuri, T.**, et al. (2024) The Effects of Artificial Intelligence Assistants on the Acquisition of Surgical Skills. In review.

Sepuri, T. (2024) Using Input Patterns to Study the Effects of YouTube Usage on Transitive Verb Overgeneralization. In preparation.

RESEARCH PROJECTS

Child Input Patterns | *R, Spacy*

Feb – May 2023

- Designed a YouTube Kids data parsing and collection tool for future linguistic research
- Researched transitive overgeneralizations and input diversity differences across maternal input and YouTube Kids
- Cleaned 15 subtitle and transcript files, and identified and tagged sentences with HuggingFace and Spacy in R
- Analyzed collocations and type and token frequencies for transitive verbs and regular past tense verbs

Inhibition in Language Switching | *Python*

Feb – May 2023

- Investigated the role of associative memory in differences in trilingual language switching ability
- Designed a Bayesian network based on existing inhibitory control fMRI data and language specific differences
- Conducted counterfactual analysis on a Bayesian regressive model to predict memory retrieval significance

Named Entity Recognition | *Python*

Oct – Dec 2022

- Implemented two scalable algorithms to identify proper nouns in sentences using latent dirichlet allocation
- Showcased the importance of contextual awareness in reducing bias through two adversarial training methods
- Argued for reuse of masking and noise data from large language models in simpler topic modeling algorithms

MemeCC | *TypeScript, Vue.js, Flask, Python, PostgreSQL, HTML, CSS*

Sep – Dec 2020

- Created a full-stack web application to search through clustered memes aggregated from social media
- Implemented Reddit and Twitter APIs in tandem with Flask and SQLAlchemy
- Automatically retrieved text with Tesseract and built a convolutional neural network for humor detection

SKILLS

Languages: English, Telugu, Hindi

Coding Languages: R, Python, TypeScript, JavaScript, Java, SQL (MySQL, Postgres), HTML/CSS

Frameworks: Spacy, NLTK, tidyverse, React.js, Vue.js, Django, Node.js, Express.js, Flask, JUnit, Mocha

Developer Tools: Microsoft Excel, Git, AWS, Linux, Bash, Heroku, Azure, Google Cloud Platform

HONORS AND AWARDS

- ACM Award for Student Most Likely to have an Outstanding Career, Case Western Reserve University (May 2023)
- Junior Senior Scholarship, Case Alumni Association, Case Western Reserve University (Aug 2021)
- Outstanding Outgoing Student, The Hyderabad Public School (May 2019)

OTHER EXPERIENCE

Teaching Assistant Aug 2021 – May 2023
Case Western Reserve University *Cleveland, OH*

- Led 6 weekly discussion sections in total for Software Craftsmanship for Fall 2021, Fall 2022 and Spring 2023
- Mentored and guided 30 students to write better code and graded 200 programming assignments
- Held weekly office hours and designed 3 assignments highlighting language-free thinking and defensive programming

Software Engineer June 2023 – Present
Oak Hill Advisors *New York, NY*

- Upgraded trade data warehouse to an AWS serverless system with Redis caching for 200% faster API performance
- Designed a robust analyst tagging system for a Power BI data quality dashboard through extensive unit testing

Software Development Engineer Intern May 2022 – Aug 2022
Amazon Inc. *Seattle, WA*

- Added a security policy option to four AppSync custom domain API calls using Java and XML
- Fixed two breakable API association step functions used by around 200 customers daily with state flow diagrams

Software Application Developer Aug 2020 – May 2022
Eradani Inc. *Remote*

- Built updated UPS connectors for Cengage and Macmillan to prevent a shut down of their shipping services
- Converted four Java APIs for Brunswick to TypeScript with a 36% decrease in cyclomatic complexity

UNIVERSITY ACTIVITIES

President | *Association for Computing Machinery, Case Western Reserve University* Aug 2021 – May 2023

- Created and led eight workshops to teach algorithmic problem solving, Python and TypeScript
- Organized two semester long team project building competitions focused on creativity and collaboration
- Advised 23 total students during open class office hours and course advising sessions

Director of Design | *The Observer, Case Western Reserve University* Aug 2022 – May 2023

- Devised new layout and template in Adobe InDesign for a newspaper with 4000 weekly printed copies
- Managed and instructed team of three designers for eight hours a week with an emphasis on experimentation

REFERENCES

References available upon request.