

# Oghenemaro Anuyah

PH.D STUDENT · UNIVERSITY OF NOTRE DAME

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## Research Interests

Human-Computer Interaction, Marginalized Communities, Vulnerable Populations, Responsible AI, Information & Communication Technologies, Social Computing.

## Education

### Ph.D in Computer Science and Engineering

UNIVERSITY OF NOTRE DAME

• **Advisor:** Dr. Ronald Metoyer

Jan 2020 - PRESENT

Notre Dame, IN

### Ph.D in Computer Science (transferred out)

BOISE STATE UNIVERSITY

Aug 2018 - Dec 2019

Boise, ID

### M.S in Computer Science

BOISE STATE UNIVERSITY

Aug 2016-Jul 2018

Boise, ID

### B.S in Computer Science

DELTA STATE UNIVERSITY

Nov 2008-Oct 2012

Delta, NG

## Publications

### Conference Proceedings [Peer-Reviewed]

- (C8) **Anuyah, O.**, Conrado, A.M., Carlson, C., Rush, J., McBride, M., Farrell, M., and Metoyer, R. 2022. Amplifying Community Access to Social Care Resources through Design. *Under review*.
- (C7) Liu, Y., Lin, J., **Anuyah, O.**, Metoyer, R., Cleland-Huang, J. (2022). Generating and Visualizing Trace Link Explanations. In proceedings of the International Conference on Software Engineering, Pittsburgh, USA.
- (C6) Milton A., **Anuyah O.**, Spear L., Wright K., and Pera M. S. "A Ranking Strategy to Promote Web Resources Supporting the Classroom Environment". In: *IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT)*, 2020 [**Gave oral presentation**].
- (C5) Downs B., **Anuyah O.**, Shukla A., Fails J., Pera M. S., Wright K., and Kennington C. "KidSpell: A Child-Oriented, Rule-Based, Phonetic Spellchecker". In: *Proceedings of the Twelfth International Conference on Language Resources and Evaluation (LREC)*, 2020.
- (C4) Fails J., Pera M. S., **Anuyah O.**, Kennington C., Wright K., and Bigirimana W. "Query Formulation Assistance for Kids: What is Available, When to Help & What Kids Want". In: *Proceedings of the 18th ACM Conference on Interaction Design and Children (IDC)* (pp. 109–120), June 2019 [**Gave oral presentation**].
- (C3) **Anuyah O.**, Fails J., and Pera M. S. "Investigating Query Formulation Assistance for Children". In: *Proceedings of the 17th ACM Conference on Interaction Design and Children (IDC)* (pp. 581–586), June 2018.
- (C2) Madrazo A. I., Dragovic N., **Anuyah O.**, and Pera M. S. "Looking for the Movie Seven or Sven from the Movie Frozen? A Multi-perspective Strategy for Recommending Queries for Children". In: *Proceedings of the ACM Conference on Human Information Interaction and Retrieval (CHIIR)* (pp. 92–101), March 2018.
- (C1) Ekstrand M. D., Tian M., Madrazo A. I., Ekstrand J. D., **Anuyah O.**, McNeill D., and Pera M. S. "All The Cool Kids, How Do They Fit In?: Popularity and Demographic Biases in Recommender Evaluation and Effectiveness". In: *Proceedings of the ACM Conference on Fairness, Accountability, and Transparency (FACCT)* (pp. 172–186), January 2018.

### Poster Proceedings [Lightly Peer-Reviewed]

- (P2) Madrazo A. I., Green M., **Anuyah O.**, and Pera M. S. "Can we Leverage Rating Patterns from Traditional Users to Enhance Recommendations for Children?". In: *ACM RecSys Poster Proceedings*, August 2018.
- (P1) **Anuyah O.**, Madrazo A. I., McNeill D., and Pera M. S. "Can Readability Enhance Recommendations on Community Question Answering Sites?". In: *ACM RecSys Poster Proceedings*, August 2017.

## Journal Articles [Peer-Reviewed]

- (J1) **Anuyah O.**, Milton A., Green M., and Pera M. S. "An Empirical Analysis of Search Engines' Response to Web Search Queries Associated with the Classroom Setting". In: *Aslib Journal of Information Management* (Vol. 72 No. 1, pp. 88-111), December 2019.

## Journal Articles (Acknowledged for research contribution)

- (A1) Azpiazu A. I., Dragovic N., Pera M. S., and Fails J. "Online searching and learning: YUM and other search tools for children and teachers". In: *Information Retrieval Journal* (Vol. 20 No. 5, pp. 524-545), 2017.

## Conference Workshops [Lightly Peer-Reviewed]

- (W5) **Anuyah O.** and Metoyer R. "Designing for Complex Needs of Vulnerable Populations: Considerations for Integrating Social Determinants of Health into Technology Design." In: *CHI'22 Workshop on Challenges, Tensions, and Opportunities in Designing Ecosystems to Support the Management of Complex Health Needs*, April 2022.
- (W4) **Anuyah O.**, Fine W., and Metoyer R. "Design Decision Framework for AI Explanations". In: *Mensch und Computer - Workshopband*, 2021 [Gave oral presentation].
- (W3) **Anuyah O.**, Milton A., Green M., and Pera M. S. "The Need for a Comprehensive Strategy to Evaluate Search Engine Performance in the Classroom". In: *3rd International and Interdisciplinary Perspectives on Children & Recommender and Information Retrieval Systems (KidRec) Workshop - Co-located with ACM Interaction Design and Children Conference (IDC)*, June 2019 [Gave oral presentation].
- (W2) **Anuyah O.**, Madrazo A. I., and Pera M. S. "Using Structured Knowledge and Traditional Word Embeddings to Generate Concept Representations in the Educational Domain". In: *Companion Proceedings of the 2019 World Wide Web Conference* (pp. 274-282), May 2019 [Gave oral presentation].
- (W1) **Anuyah O.**, Madrazo A. I., Dragovic N., and Pera M. S. "Lightning Talk-Looking for the Movie Seven or Sven from the Movie Frozen?". In: *Companion Proceedings of the 2019 World Wide Web Conference* (pp. 1266-1267), May 2019 [Gave oral presentation].

## Thesis

- (T1) **Anuyah O.** "Fostering the Retrieval of Suitable Web Resources in Response to Children's Educational Search Tasks". In: *Boise State University Theses and Dissertations*, 2018.

## Skills

**Legend:** Used in **most projects** / several projects / one or two projects.

<b>Empirical Methods</b>	Qualitative Analysis, Mixed Methods, Quantitative Analysis, Grounded Theory
<b>Data Collection and Analysis</b>	Participatory Design, Affinity Diagramming
<b>Data Science / Machine Learning / AI</b>	Logistic Regression, Clustering, Deep Learning
<b>Programming</b>	Python, R, SQL, Java, Keras
<b>Web Development Languages</b>	HTML, CSS, MySQL, JavaScript, D3.js, PHP, Flask framework
<b>Selected Relevant Coursework</b>	Quantitative Methods, Human Computer Interaction, Machine Learning, Information Visualization

## Research Experience

### University of Notre Dame

#### RESEARCH ASSISTANT

Notre Dame, IN  
January 2020 - present

- Lead research projects focused on designing human-centered systems to improve social care access.
- Conduct qualitative and quantitative empirical studies to better understand the needs of target users.
- Present research findings at international Human Computer Interaction conferences.
- Conducted research that involved designing an interactive interface for explaining software trace links.

## Boise State University

Boise, ID

### RESEARCH ASSISTANT

August 2016 - December 2019

- Conducted research on enhancing web search environments for children.
- Implemented a search interface for archiving children's search sessions.
- Designed an interface that adopts visual cues in presenting query suggestions to users.
- Conducted qualitative and quantitative analysis to understand how search engines respond to children's needs.
- Mentored two undergraduate students and one M.Sc student for research.
- Prepared detailed research reports.
- Worked in a team environment to meet project goals.
- Presented research findings at international Information Retrieval and Human Computer Interaction conferences.

## Teaching Experience

### University of Notre Dame

Notre Dame, IN

#### TEACHING ASSISTANT

August 2020 - present

- **Course:** Human-Computer Interaction
- **Instructor:** Dr. Ronald Metoyer

### Boise State University

Boise, ID

#### TEACHING ASSISTANT

May 2017 - August 2017

- **Course:** Introduction to Programming with Java
- **Instructor:** Dr. Jerry Alan Fails

## Industry Experience

### Microsoft Corporation

Redmond, WA

#### DESIGN RESEARCH INTERN

June - August 2021 & May - August 2022

- Conducted research in the Mixed Reality team.
- Wrote and published a literature review in the Microsoft literature database.
- Conducted interview study with target customers and analyzed result findings.
- Presented literature review and interview findings to stakeholders.

## Selected Volunteer Experience

### Riverglen GO STEM (girls only) Camp

#### ACM-W STUDENT VOLUNTEER

Summer 2019

- Taught middle school female students how to program computers.

### Engineering and Science Festival, Boise State University

#### NSBE SENIOR STUDENT LEADER AND EVENT ORGANIZER

Fall 2018

- Leveraged lego coding express to introduce young children to coding.

### Garfield Elementary School

#### NSBE AND ACM-W STUDENT VOLUNTEER AT HOUR-OF-CODE EVENT

Fall 2018

- Taught school children programming concepts using Minecraft.

### Engineering and Science Festival, Boise State University

#### ACM-W STUDENT VOLUNTEER AT HOUR-OF-CODE EVENT

Spring 2018

- Tutored young children how to code using computer programming software.

## Oral Presentation

### Richard Tapia Computing Conference

Virtual

**POSTER PRESENTER** FOR "SociRec: A user-centric, hybrid system for recommending social services to users."

2020

### ACM International Conference on Interaction Design and Children (IDC)

Boise, ID

**PAPER PRESENTER** FOR "Query formulation assistance for kids: What is available, when to help & what kids want"

2019

## International Workshop on Deep Learning for Graphs and Structured Data Embedding (Co-located with the ACM World Wide Web Conference)

San Francisco, CA

**PAPER PRESENTER** FOR "Using structured knowledge and traditional word embeddings to generate concept representations in the educational domain."

2019

## The Third Workshop on Women in Web Data Science (Co-located with the ACM World Wide Web Conference)

San Francisco, CA

**PAPER PRESENTER** FOR "Lightning Talk - Looking for the Movie Seven or Sven from the Movie Frozen?"

2019

## CRA-URMD Grad Cohort Workshop

San Diego, CA

**POSTER PRESENTER** FOR "Extending Safe Search Functionality for Identifying Child-Safe Web Resources."

2018

## Grace Hopper Conference

Orlando, FL

**POSTER PRESENTER** FOR "Suitability of Online Resources Retrieved in Response to Queries Written by Children."

2017

## CRA-W Grad Cohort Workshop

Washington, DC

**POSTER PRESENTER** FOR "Considering Content and Suitability of Online Resources Retrieved in Response to Children's Queries."

2017

## Awards & Recognition

2022	<b>USA National Interest Waiver Recipient</b> , Received Merit-Based Green Card for conducting research of significant merit/benefit to the United States	USA
2020,21	<b>Scholarship Recipient</b> , Funded to attend the Richard Tapia Computing Conference	Virtual
2020-22	<b>Contributor</b> , National Science Foundation (NSF) grant with award number 1901059 (Ph.D)	Notre Dame, IN
2019	<b>Scholarship Recipient</b> , Alfred M. Dufty, Jr. Graduate Student Travel and Presentation Award (\$1,000)	Boise, ID
2018-19	<b>Contributor</b> , NSF grant with award number 1763649 (Ph.D)	Boise, ID
2019	<b>Scholarship Recipient</b> , NSBE BCA/Major/Fellows (\$2,500)	USA
2019	<b>Scholarship Recipient</b> , Funded by IAAMCS to attend National Society of Blacks in Computing Conference	Atlanta, GA
2018	<b>Scholarship Recipient</b> , Funded by Computing Research Association to attend CRA-URMD Grad Cohort	San Diego, CA
2018	<b>Nominee</b> , Boise State University Campus Award for Commitment to Community	Boise, ID
2017	<b>Scholarship Recipient</b> , Funded by Anita Borg Institute to attend Grace Hopper Conference	Orlando, FL
2017	<b>Scholarship Recipient</b> , Funded by Computing Research Association to attend CRA-W Grad Cohort	Washington, DC
2017	<b>Assistantship Recipient</b> , Boise State Graduate Assistantship for Teaching and Research	Boise, ID
2016-18	<b>Contributor</b> , NSF grant with award number 1565937 (M.S.)	Boise, ID
2016-17	<b>Scholarship Recipient</b> , Boise State University Graduate GEM Scholarship	Boise, ID
2010-12	<b>Scholarship Recipient</b> , Delta State Bursary	Delta, NG

## Service

### Research Organizing Committees

2020-22	<b>Program Committee Member &amp; Reviewer</b> , ACM SIGIR Conference on Human Information Interaction and Retrieval (CHIIR)
2021-22	<b>Program Committee Member &amp; Reviewer</b> , The Conference on Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT)
2019	<b>Co-Publicity Chair</b> , ACM UMAP Conference
2019	<b>Student Volunteer</b> , ACM IDC Conference

### Organizations

2021-22	<b>Graduate Student Board Representative</b> , Department of Computer Science and Engineering at the University of Notre Dame
2020-	<b>Vice President of Careers</b> , Africa Graduate Club of Notre Dame
2018-19	<b>Vice President</b> , National Society of Black Engineers (NSBE): Boise State University Chapter
2017-19	<b>Financial Officer</b> , ACM-W: Boise State University Chapter

### Affiliations

2017-22	<b>Member</b> , Association of Computing Machinery (ACM): <b>Membership Number 4077264</b>
2017-22	<b>Member</b> , National Society of Black Engineers (NSBE): <b>Membership Number 348106</b>