

# Hannah K. Bako | PhD Student

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## Education

<b>University of Maryland</b> <i>Doctor of Philosophy, Computer Science</i> Advised by Dr. Zhicheng (Leo) Liu and Dr. Leilani Battle	<b>College Park</b> 2019–2024
<b>Stevens Institute of Technology</b> <i>Master of Science, Software Engineering</i>	<b>Hoboken, NJ</b> 2017–2019
<b>Babcock University</b> <i>Bachelor of Science, Computer Information Systems</i>	<b>Ogun, NG</b> 2011–2015

## Experience

### Research

<b>Human-Data Interaction Group</b> <i>Doctoral Researcher, College Park</i>	<b>University of Maryland</b> Fall 2021–Present
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- **Evaluating how Visualization Design Examples affect Design Ideation**  
Conducting a study to quantitatively measure how visualization design examples affect visualization design outcomes.

<b>BAD Lab</b> <i>Doctoral Researcher, College Park</i>	<b>University of Maryland</b> Fall 2019–Fall Summer 2022
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- **Automated Development Environment for Rapid Visualization Authoring in D3**  
Investigated techniques and approaches used by D3.js users to create interactive visualizations on the internet. Developed a web based programming environment to support interaction recommendation, code generation and augmentation.
- **Evaluating Creativity During Visual Exploratory Analysis**  
Carry out experiments to evaluate how the insight generation process during visual exploratory analysis affects the measures of creativity for visualization users.

### Industry

<b>Tableau</b> <i>User Research Intern, Mentor: Bruce Phillips</i>	<b>Seattle, WA</b> May 2021– Aug 2021
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- Spearheaded a research initiative to unearth key insights on the unmet needs of business users. Provided guidelines to help direct future efforts to support the needs of business users.

<b>Apple AI-ML</b> <i>Design &amp; Visualization Intern, Mentor: Donghao Ren</i>	<b>Seattle, WA</b> May 2021– Aug 2021
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- Collaborated with broader teams across Apple to research and develop APIs for SwiftChart, a powerful SwiftUI framework for transforming data into informative visualizations.

<b>Systems Engineering Research Center (SERC)</b> <i>Graduate Assistant</i>	<b>Hoboken, NJ</b> Sept 2017–May 2019
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- Developed a web-based data collection and processing tool for the World Wide Directory (www.wwsie.com)
- Improved SERC website user experience through redesign of the site pages.
- Reduced data maintenance cost through an introduction of effective data management measures.

## Nhub Nigeria

Android UX Software Developer

Plateau, NG

Jan 2017–Jul 2017

- Involved in the implementation of scalable software systems for clients
- Collaborated with team members to research, design and implement applications that solve real-world problems
- Improved intern performance through training on introduction to programming and problem-solving skills

## Teaching

### University of Maryland

Graduate Teaching Assistant

College Park, MD

Fall 2019– Present

CMSC 434: Introduction to Human-Computer Interaction (Fall 2022)

CMSC 471: Introduction to Data Visualization (Spring 2022)

CMSC 433: Programming Technologies and Paradigms (Fall 2019 – Spring 2021)

CMSC 320: Introduction to Data Science (Summer 2020)

## Publications

### Conference Papers

*Understanding how Designers Find and Use Data Visualization Examples* IEEE VIS 2022

Hannah K. Bako, Xinyi Liu, Leilani Battle, and Zhicheng Liu

*Streamlining Visualization Authoring in D3 Through User-Driven Templates* IEEE VIS 2022

Hannah K. Bako, Alisha Varma, Anuoluwapo Faboro, Mahreen Haider, Favour Nerrise, Bissaka Kenah, and Leilani Battle

### Workshop Papers

*Tweets and Social Network Data for Twitter Bot Analysis* SBP-BRIMS 2021

Jennifer Golbeck, Nilofarsadat Alavi, Hannah K. Bako, Saptarashmi Bandyopadhyay, Calvin Bao, et al.

### Technical Reports

*User-Driven Programming Support for Rapid Visualization Authoring in D3* Arxiv Preprint 2021

Hannah K. Bako, Alisha Varma, Anuoluwapo Faboro, Mahreen Haider, Favour Nerrise, Bissaka Kenah, John P. Dickerson, and Leilani Battle

## Skills

**Programming Languages:** Java, Python, Javascript, Swift, SwiftUI, R, C++, C, Flask, Pandas, ReactJS, D3.js, SQL

**Tools:** MYSQL, Git, Jenkins, MongoDB, Microsoft Access, AWS, Tableau, PowerBI, Salesforce

## Mentorship

### Xinyi Liu

BSc. in Computer Science

Qualitative analysis of Interview data on the use of examples for design ideation.

Currently a Masters student at University of Texas at Austin

University of Maryland

Fall 2021–Present

### Alisha Varma

BSc. in Computer Science

University of Maryland

Spring 2020–Summer 2022

Implementation of AST transformation strategies into prototype and development of research methodology for measuring user creativity during data exploration.

*Currently a Data Analyst at Capital One*

**Bissaka Kenah**

*BSc. in Computer Science*

Quantitative analysis of user telemetry from exploratory visual analysis

**University of Maryland**

*Fall 2021–Summer 2022*

**Anuoluwapo Faboro**

*BSc. in Computer Science*

Classification of visualization examples and UX design of prototyping systems

**University of Maryland**

*Spring 2020–Fall 2021*

**Favor Nerrise**

*BSc. in Computer Science*

Integration of automatic visualization classifier into Mirny prototyping tool.

*Currently a PhD student at Stanford University.*

**University of Maryland**

*Spring 2021*

**Mahreen Haider**

*BSc. in Computer Science*

Classification of visualization examples and UX design of prototyping systems.

*Currently a Software Engineer at Fannie Mae*

**University of Maryland**

*Spring 2020–Spring 2021*

## Awards

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**2022:** CRA-WP Gead Cohort for Women Workshop Fellowship

**2015:** Eagle Leadership award

**2019 - 2020:** Dean's Fellowship, University of Maryland

## Extra-Curricular Activities

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**2022:** Reviewer ACM conference on Creativity Cognition

**2021:** Student volunteer at the IEEE Vis Conference

**2020:** Student volunteer at the Very Large Databases Conference(VLDB)

**2019:** Organizer at the Conference on Systems Engineering (CSER)

**2016:** Volunteer Computer Literacy Program for underprivileged children in Nigeria

**2015:** Served as Financial Secretary on the 2015 Babcock University graduating class executives