

GLORIA ASHIYA KATUKA

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EDUCATION

University of Florida, Herbert Wertheim College of Engineering Gainesville, FL

PhD, Computer Science Expected 2024

- UF Graduate School Preeminence Award Recipient
- Gartner Group Graduate Fellowship Award
- UF Scholarship Award for Grace Hopper Conference
- Generation Next Scholar

MSc, Computer Science 2020 - 2023

University of Florida, Warrington College of Business Gainesville, FL

MSc, Information Systems and Operations Management (MSISOM) 2019 - 2020

- Track: Information Technology

BSBA, Information Systems 2016 - 2019

- Minor: Leadership

RESEARCH EXPERIENCE

Department of Computer & Information Science & Engineering, University of Florida

PhD Research Assistant, LearnDialogue Lab – [IntegrateAI Project](#) 2022 - Present

- Designing and developing pedagogical approaches to integrate natural language processing (NLP) into Middle School classrooms by applying NLP approaches such as, sentiment analysis and topic modelling to science-related social media datasets e.g., Twitter data on invasive species such as cats and iguanas
- Analyzing potential applications of NLP techniques on social media textual data for problem-based learning in K-12 science classrooms, such as scraping web data, preprocessing data, training text classification models
- Conducting participatory/ co-design studies with middle school teachers to better understand the ways to further AI competencies using NLP

PhD Research Assistant, LearnDialogue Lab – [Camp DIALOGS Project](#) 2021 - 2022

- Developed Conversational AI-based curriculum for summer camp to foster CS and AI Learning through building conversational apps for Google Assistant/ Home using Google Dialogflow and newly developed AMBY interface
- Lead a 2-week AI-based summer camp to engage middle school students and to investigate their socio-cognitive outcomes and interest and identity towards AI learning via Conversational apps development
- Mentored 2 undergraduate students on research and software development capstone projects

PhD Research Assistant, LearnDialogue Lab – [EarSketch CAI Project](#) 2020 - 2021

- Facilitated the active development of a co-creative dialogue system using participatory design to generate dialogue for the EarSketch CAI project, an NSF funded project
- Designed dialogue for a co-creative agent (CAI) to chat with learners during co-creative tasks on EarSketch
- Spearheaded a journal paper to report the results and findings from collaborative dialogue data analysis and statistical analysis on the relationship between collaborative dialogue moves and learner's perception of their partner

MSc Research Assistant, LearnDialogue Lab – [EarSketch CAI Project](#) & [ENGAGE Project](#) 2019 - 2020

- Developed a novel method of generating and extracting dialogue acts n -grams within a collaborative dialogue corpus to predict various outcomes during collaborative programming such as satisfaction, stress/relaxation
- Analyzed collaborative dialogue moves in middle school pair programming in computational science activities for Engage Project, an NSF funded project
- Developed a dialogue act tagging scheme to classify dialogue moves and ran statistical analysis to predict peer satisfaction

WORK EXPERIENCE

Intel, Hillsboro, OR

Graduate Technical Intern, Datacenter and AI Platforms Group Summer - Fall 2021(Remote)

- Developed a Design Change Request (DCR) Automation Tool to reduce the time product architects create a DCR from 30 mins-1 hr. to 3-5 mins
- Wrote the technical requirements for the DCR automation tool, implemented, and validated the tool
- Fixed missing requirements for software components on track for 5 target projects
- Pilot class for the Intel's Develop, Retain, InnoVate and Engage (DRIVE) program

UF, Department of Computer & Information Science & Engineering, Gainesville, FL

OPS Employee, Research

Summer 2020

- Worked on 2 NSF funded research projects focused on computer science learning for K-12
- Ran studies, collected and analyzed dialogue data for both studies using exploratory collaborative dialogue analysis techniques
- Volunteered on an NSF grant proposal writing for Computer science education funding opportunity - ITEST 2020

Symantec (now NortonLifeLock), Mountain View, CA

Intern, IT Network, Data Centers and Site Operations

Summer 2019

- Consolidated data from Fixed Assets Register (FAR) and Configuration Management Database (CMDB) and create a single data table for potential write offs or repurpose on 15 closing sites. Identified a financial in year impact of \$79k for assets with serial numbers and a Net Book Value of over \$2M
- Worked with the Internet Protection team to facilitates with ports testing for new lab location, and assisted with ordering and disconnecting circuits
- Proposed and organized a one-day summer internship event for 60 interns with a \$5000 budget as a feasible replacement for the cancelled 4-day Intern Conference

Symantec (now NortonLifeLock), Mountain View, CA

Intern, IT ERP and Database Services

Summer 2018

- Audited 45+ tools in the decommissioning of the old ERP system to a new cloud-based system by recommending the configuration of 26 tools, consolidation of 9 tools, and replacement of 10 tools with built-in components
- Created existing- and future- state processes for ERP tools used by Sales Finance, Consumer Business Unit, and Enterprise Business Units for Bookings/ Billings assignments and adjustments, Crediting Rules, Channel Management, and Global Incentive Compensations across teams

WJ Bergin Cabinetry, Orlando, FL

Intern, Business Analyst (Part-time)

Spring 2018

- Transformed both business and technical operational requirements of the company through data integration and configurations of jobs requirements and standardizations of SmartJoints measurements
- Managed databases and customized measurements for specific job requirements with AutoCAD using MS Access. Configured a system of classifying and merging various jobs to reduce material waste from 35% to 8%

Symantec (now NortonLifeLock), Mountain View, CA

Intern, IT Strategy, Planning and Business Operations

Summer 2017

- Led the end-to-end process documentation for the migration of all IT projects portfolio management (PPM) to Service Exchange by ServiceNow
- Developed and pitched changes to project funding approval process that helped reduce approval check points and streamline decisions for the IT Leadership team and CIO, tracking the status of all IT projects & compliance within SOx requirements

SKILLS

- Technical Skills: Proficient in Python, Java, C++, R, LaTeX, HTML, CSS, SQL. Familiar with C#, JavaScript & Erlang
- IDEs: Visual Studio Code, Spyder, IntelliJ, Netbeans, Eclipse, Atom, R studio, PyCharm, Xcode
- Visualizations: Tableau, Microsoft PowerBI, Visio, LucidChart
- Tools: Google Collab, Jupyter Notebook, JMP, SPSS, LightSide, Wireshark, GitHub, SMACS, Virtual Box
- Specializations: Requirements Engineering, Project Management, Process documentation, Apps/ tools support, Presentation skills

PROJECTS

Traffic Signs Image classification using Transfer Learning with Xception CNN model

Camp DIALOGS website design and development

<http://www.campdialogs.org/>

Design Change Request (DCR) Automation Tool - Property of Intel

Rubber Duck Debugging Agent in Dialogflow

Collaborative Dialogue Analysis

https://github.com/LearnDialogue/N_gram_Gen_Dialogue_Analysis

easySearch Chrome Extension

<https://github.com/proverbsllc/teamawesomeforce>

P2P File Sharing

<https://github.com/CNT5106CFall2020/Project>

Huffman Encoding and Decoding

<https://github.com/gkatuka/COP5536Fall2020>

LEADERSHIP EXPERIENCE

Family Matters, Lake County, FL

Member, Advisory Board

2022 - Present

- Attending advisory board meetings for a non-profit that provides tutoring and counseling for youths in Lake county Florida

- Design collaborative projects and organizing fundraising events for the non-profit to provide easy access to technology for the youths

University of Florida Police Department (UFPD), UF

Member, Campus Advisory Committee

2020 - Present

- Serving as graduate students' representative on the committee to advise the UF Police Chief on campus community relationship issues, incidents or allegations such as use of excessive force or violation of law or civil liberties
- Facilitating discussion around challenges faced by minority students within the campus and coordinating actionable programs to improve the student experiences

Black Graduate Student Organization, UF

Community Service Chair

2021 - 2022

- Organizing community service events to encourage members to give back to their community
- Creating a mentoring program that connects graduate students with faculty mentors and undergraduate mentees

2nd Vice President

2020 - 2021

- Lead and organized general body meetings and events for the Black Graduate Student Organizations
- Assisted committee chairs to plan and execute campus- wide events such as annual graduate symposiums and research workshops

NGO

Founder and Executive Director, InTECHgrate

- Leading a Non-profit organization that provides after school coding lessons, career advising and mentorship to Middle and High school students interested in pursuing an academic or professional career in Computer Science or Information Technology. In the past year, we have reached out to 250 students around Alachua County
- Managing a team of 10 officers and several volunteers and directing programs such as Tech Talks presentations and Tech Tuesday after school program

Other Affiliations: Graduate National Society of Black Engineers; Brain Trust Team, Africa Teen Geeks (ATG); Planning Team, UNODC Education for Justice

PUBLICATIONS

Journals

- **G. A. Katuka**, A. Webber, J.B. Wiggins, K.E. Boyer, B. Magerko, T. McKlin, J. Freeman. "The Relationship between Co-Creative Dialogue and High School Learners' Satisfaction with their Collaborator in Computational Music Remixing." *In Proceedings of the ACM on Human-Computer Interaction (HCI)*, vol. 6 no. CSCW1, 2022
- A.E. Griffith, **G.A. Katuka**, J.B. Wiggins, K.E. Boyer, J. Freeman, B. Magerko, T. McKlin. "Investigating the Relationship Between Dialogue States and Partner Satisfaction during Co-Creative Learning Tasks." *Proceedings of the International Journal on Artificial Intelligence in Education (IJAIED)*, 2022

Conference Papers

- **G.A. Katuka**, Y. Auguste, Y. Song, X. Tian, A. Kumar, M. Celepkolu, K. E. Boyer, J. Barrett, M. Israel and T. McKlin. "A Summer Camp Experience to Engage Middle School Learners in AI through Conversational App Development." *In Proceedings of the Proceedings of the 53rd ACM Technical Symposium on Computer Science Education, 2023 (Accepted)*
- Y. Song, **G.A. Katuka**, J. Barrett, X. Tian, A. Kumar, T. McKlin, M. Celepkolu, M. Israel and K. E. Boyer. "AI Made By Youth: A Conversational AI Curriculum for Middle School Summer Camps." *EAAI 2023 (Accepted)*
- Y. Ma, **G.A. Katuka**, M. Celepkolu, K.E. Boyer. "Investigating Multimodal Predictors of Peer Satisfaction for Collaborative Coding in Middle School." *In the Proceedings of the International Conference on Educational Data Mining (EDM), 2022*
- **G.A. Katuka**, R. Bex, M. Celepkolu, K.E. Boyer, E. Wiebe, B. Mott and J. Lester. "My Partner was a Good Partner: Investigating the Relationship between Dialogue Acts and Satisfaction among Middle School Computer Science Learners." *In Proceedings of the 14th International Computer Supported Collaborative Learning (CSCL), 2021*
- E. Truesdell, J. Smith, S. Mathew, T. McKlin, **G. A. Katuka**, A. E. Griffith, B. Magerko, J. Freeman, K. E. Boyer. "Supporting Computational Music Remixing with a Co-Creative Learning Companion." *Proceedings of the 12th International Conference on Computational Creativity (ICCC), 2021*
- K. Ying, **G.A. Katuka**, K.E. Boyer. "Using Dialogue Analysis to Predict Women's Stress During Remote Collaborative Learning in Computer Science." *Proceedings of the 26th Conference on Innovation and Technology in Computer Science Education (ITiCSE), 2021*
- A.E. Griffith, **G.A. Katuka**, J.B. Wiggins, K.E. Boyer, J. Freeman, B. Magerko, T. McKlin. "Discovering Co-creative Dialogue States during Collaborative Learning." *Proceedings of the International Conference on Artificial Intelligence in Education (AIED), 2021*