

CHINENYE NDULUE

AB, Canada

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Education

- PhD. Computer Science, Dalhousie University, Halifax, Canada** 2019 – 2024
P-Gamer: A Domain-Independent Platform for Tailoring Persuasive Games and Studying their Effectiveness.
Thesis Advisor: Dr Rita Orji (Dalhousie University).
- MSc. Computer Science, Dalhousie University, Halifax, Canada** 2018 – 2019
STD Pong 2.0: An African-Centric Persuasive Game for Promoting Risky Sexual Behaviour Change.
Thesis Advisor: Dr Rita Orji (Dalhousie University).
- BSc. Computer Science, Nnamdi Azikiwe University, Awka, Nigeria.** 2006 – 2010
Best Graduating Student, Computer Science 2009/2010 Grad Set.
"Design and Implementation of a University Result Management System"
Project Advisor: Dr Ignatius Ezeani (Lancaster University, United Kingdom).

Work Experience

- Assistant Professor** 2024–Present
MacEwan University, Edmonton, Canada
- Graduate Teaching Assistant** 2018–2024
Dalhousie University, Halifax, Canada
CSCI 1120: Intro to Computer Systems (2 terms)
CSCI 6903: Persuasive Computing (3 terms)
CSCI 6610/4163: Human-Computer Interaction (3 terms)
CSCI 3160: Designing User Interfaces (3 terms)
CSCI 4169/6307: Usable Security & Privacy (1 term)
- Sessional Instructor** Fall 2023
Faculty of Computer Science, Dalhousie University, Halifax, Canada
CSCI 4260/6611: Persuasive Computing
- Sessional Instructor** Summer 2022
Faculty of Computer Science, Dalhousie University, Halifax, Canada
CSCI 6610: Human-Computer Interaction
- MACS Admission Technical Interviewer** 2022 – 2024
Faculty of Computer Science, Dalhousie University, Halifax, Canada
- Software Programmer** 2016 – 2017
Abuja Clinics (Nig.) Ltd, Maitama, Abuja, Nigeria.
Development and maintenance of the Hospital management software and website.
Maintenance and Repair of computers in the hospital.
- Lecturer and Head of Department** 2016
ROCANA Institute of Technology, Emene, Enugu, Nigeria.

I was the head of the Department of Multimedia and taught courses including: Web Design, Database Management, Computer Programming and Logic Gates.

Freelance Software Developer 2014 – 2016

ZabrainTec Concept, Shomolu, Lagos, Nigeria.

I developed software and websites on demand, including koefoundation.org and realalumni.com

Software Developer 2013 – 2014

Neptune Software LTD, Apapa, Lagos, Nigeria.

Systems Engineer/Operator 2011 – 2012

Fadama III (World Bank-assisted project), Awe, Nassarawa State, Nigeria.

Awards and Honours

2025: **Best Paper Award – Design, Innovation, and Evaluation Nominee**, Persuasive 2025 Conference.

2024: **Best Student Paper**, Persuasive 2024 Conference.

2024: **Best Paper (Highly Commended)**, Persuasive 2024 Conference.

2023: **Honourable Mention Award**, ACM SIGCHI, CHI 23.

2022: **OpenThink Cadre 2022**, Dalhousie University, Halifax, Canada.

2020: **Microsoft Research Fellowship Nominee**, Dalhousie University, Halifax, Canada.

2019: Dalhousie University, Faculty of Computer Science's **PhD Scholarship**.

2019: **2nd Position at Symcor Innovation Challenge**, Symcor Inc. *For Developing the prototype of SymGames.*

2018: Dalhousie University, Faculty of Computer Science's **Master's Scholarship**.

2018: **Best Poster Award** at the HCI Across Borders Symposium, CHI 2018.

2018: **Best Presenter Award** at Personalized Persuasive Technologies Workshop, Persuasive Technology 2018.

2010: **Best Graduating Student** in Computer Science, Nnamdi Azikiwe University, Awka, 2009/2010 set.

Presentations and Invited Talks

2024: Exploring the Influence of Game Framing and Gamer Types on the Effectiveness of Persuasive Games. – Persuasive Technology Conference 2024

2024: SmileApp: The Design and Evaluation of an mHealth App for Stress Reduction Through Artificial Intelligence and Persuasive Technology. – Persuasive Technology Conference 2024

2024: A Persuasive Mobile Game to Promote Healthy Hydration Choices Using Machine Learning. – Persuasive Technology Conference 2024

- 2024: Exploring the Effect of Using a Single Versus Multiple Behaviour Change Strategies on Motivation to Use Gratitude App and Possible Gender Differences. – Persuasive Technology Conference 2024
- 2024: A Usability Evaluation of a Software Framework for Designing Persuasive Games. – Persuasive Technology Conference 2024.
- 2023: "Persuasive Games for Physical Activity in App Stores: A Systematic Review," – SEGAH 2023
- 2022: **"Nutri-Smober: A Preliminary Study to Investigate the Domain Dependency of Behaviour Change Strategies in Persuasive Games"** – CHI Play 2022
- 2022: **"COVID Dodge: An African-Centric game for promoting COVID-19 Safety Measures"** – Persuasive Technology 2022.
- 2021: **"The Art of Literature Review"** at the Summer Presentation Series, Persuasive Computing Lab
- 2021: **"STD PONG 2.0: Field Evaluation of a Mobile Persuasive Game for Discouraging Risky Sexual Behaviours among Africans Youths"** – SEGAH 2021
- 2021: **"Heuristic Evaluation of an African-centric Mobile Persuasive Game for Promoting Safety Measures Against COVID-19"** – AfriCHI 2021
- 2020: Talk on **'Becoming a Tech Queen'** at the Face of Zaria Beauty Pageant 2020, Zaria, Nigeria.
- 2019: **'Opportunities in Computer Science'** at the High School Outreach, Auburn Drive High School. Halifax, Canada.
- 2019: **'Serious Gaming'** Computer Science Open Day at Dalhousie University, Halifax, Canada.
- 2019: **"Driving Persuasive Games with Personal EEG Devices: Strengths and Weaknesses"** – Paper presented at the 27th Conference on User Modeling, Adaptation and Personalization Adjunct (UMAP'19 Adjunct).
- 2019: **"Developing Persuasive Mobile Games for African Rural Audiences: Challenges implementing the Persuasive Techniques"** – Paper presented at the 27th Conference on User Modeling, Adaptation and Personalization Adjunct (UMAP'19 Adjunct).
- 2018: **'Serious Gaming'** Computer Science Open Day at Dalhousie University, Halifax, Canada
- 2018: **"STD PONG: A Personalized Persuasive Game for Risky Sexual Behaviour Change in Africa."** – Paper at the Personalized Persuasive Technology Workshop, Persuasive Technology 2018.
- 2018: **"E-Commerce Personalization in Africa: A Comparative Analysis of Jumia and Konga."** – Paper at the Personalized Persuasive Technology Workshop, Persuasive Technology 2018.

Service and Volunteering

Committee Member, **Workload Review Panel 2025 – 2026, Faculty of Arts and Science, MacEwan University**

Transaction on Games: Reviewer 2025

Personalizing Persuasive Technologies Workshop Organizing Committee 2024

UMAP 2025 External Reviewer

SEGAH 2023 Sub Reviewer

Persuasive 2023 Sub Reviewer

CHI 2022 Student Volunteer

Frontiers in Public Health Reviewer 2021

CHI 2021 Sub-Reviewer

Organizer, Summer Presentation series 2021, Persuasive Computing Lab

CHI 2021 Student Volunteer.

AfriCHI 2021 Student Volunteers' Chair.

SMART ACCESSIBILITY 2020 Technical Program Committee.

SMART ACCESSIBILITY 2020 Reviewer.

CHI PLAY 2019 Full Papers Sub-Reviewer.

CHI 2018, Student Volunteer.

Exhibitionist at the **Dalhousie Computer Science's Open Day**, every term from 2018 to 2019.

POE Volunteer 2018.

Publications

a. Published and Accepted

1. **Ndulue, C.**, Oyebode, O., Orji, R. (2025). The Motivational Appeal of Persuasive Strategies in a Healthy Eating Behaviour Change Game. In: Win, K.T., Ali, R., Karapanos, E., Papadopoulos, G.A., Oyibo, K., Vlahu-Gjorgievska, E. (eds) Persuasive Technology. PERSUASIVE 2025. Lecture Notes in Computer Science, vol 15711. Springer, Cham. https://doi.org/10.1007/978-3-031-94959-3_20
2. Soham Sen, Oladapo Oyebode, **Chinenye Ndulue** and Rita Orji, "Boozy Gears: A Persuasive Game for Discouraging Drunk Driving," 2025 IEEE 13th International Conference on Serious Games and Applications for Health(SeGAH), Manchester, UK, **(No Publication Link Yet)**
3. Ravishankar Subramani Iyer, **Chinenye Ndulue**, Sandra Meier, and Rita Orji. 2024. Smartphone Games Heuristics (SmGH) – Towards a Standard Set of Platform-Centric Heuristic for Smartphone Games Evaluation. International Journal of Human-Computer Interaction, 41(8), 5057–5078. <https://doi.org/10.1080/10447318.2024.2356911>

4. **Chinenye Ndulue** and Rita Orji. 2024. The Impact of Persuasive Framing on the Perceived Effectiveness of a Game for Behaviour Change. *International Journal of Human-Computer Interaction*: 1–15. <https://doi.org/10.1080/10447318.2024.2355390>
5. **Ndulue, C.**, Orji, R. (2024). Exploring the Influence of Game Framing and Gamer Types on the Effectiveness of Persuasive Games. In: Baghaei, N., Ali, R., Win, K., Oyibo, K. (eds) *Persuasive Technology. PERSUASIVE 2024. Lecture Notes in Computer Science*, vol 14636. Springer, Cham. https://doi.org/10.1007/978-3-031-58226-4_16
6. Orji, J., Chan, G., **Ndulue, C.**, Orji, R. (2024). SmileApp: The Design and Evaluation of an mHealth App for Stress Reduction Through Artificial Intelligence and Persuasive Technology. In: Baghaei, N., Ali, R., Win, K., Oyibo, K. (eds) *Persuasive Technology. PERSUASIVE 2024. Lecture Notes in Computer Science*, vol 14636. Springer, Cham. https://doi.org/10.1007/978-3-031-58226-4_18
7. Anukem, S., **Ndulue, C.**, Orji, R. (2024). DROP DASH: A Persuasive Mobile Game to Promote Healthy Hydration Choices Using Machine Learning. In: Baghaei, N., Ali, R., Win, K., Oyibo, K. (eds) *Persuasive Technology. PERSUASIVE 2024. Lecture Notes in Computer Science*, vol 14636. Springer, Cham. https://doi.org/10.1007/978-3-031-58226-4_5
8. Alqahtani, F., **Ndulue, C.**, Orji, R. (2024). Exploring the Effect of Using a Single Versus Multiple Behaviour Change Strategies on Motivation to Use Gratitude App and Possible Gender Differences. In: Baghaei, N., Ali, R., Win, K., Oyibo, K. (eds) *Persuasive Technology. PERSUASIVE 2024. Lecture Notes in Computer Science*, vol 14636. Springer, Cham. https://doi.org/10.1007/978-3-031-58226-4_3
9. **Ndulue, C.**, Orji, R. (2024). Investigating Gender-Specific Preferences for Persuasive Strategies in a Persuasive Game for Healthy Eating. In the 7th International Workshop on Personalizing Persuasive Technologies (PPT 2024), *Persuasive Technology. PERSUASIVE 2024*. <https://ceur-ws.org/Vol-3728/paper8.pdf>
10. **Chinenye Ndulue** and Rita Orji. 2023. A Usability Evaluation of a Software Framework for Designing Persuasive Games. In *Adjunct Proceedings of the 31st ACM Conference on User Modeling, Adaptation and Personalization (UMAP '23 Adjunct)*. Association for Computing Machinery, New York, NY, USA, 123–128. <https://doi.org/10.1145/3563359.3596988>
11. Anirudh Ganesh, **Chinenye Ndulue**, and Rita Orji. 2023. Tailoring a Persuasive Game to Promote Secure Smartphone Behaviour. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23)*. Association for Computing Machinery, New York, NY, USA, Article 618, 1–18. <https://doi.org/10.1145/3544548.3581038>
12. **C. Ndulue** and R. Orji, "Persuasive Games for Physical Activity in App Stores: A Systematic Review," 2022 IEEE 10th International Conference on Serious Games and Applications for Health (SeGAH), Sydney, Australia, 2022, pp. 1-6. <https://doi.org/10.1109/SEGAH54908.2022.9978574>

13. **Ndulue, C.**, Melis, M., & Orji, R. (2022). Nutri-Smober: A Preliminary Study to Investigate the Domain Dependency of Behaviour Change Strategies in Persuasive Games. CHI PLAY 2022 - Extended Abstracts of the 2022 Annual Symposium on Computer-Human Interaction in Play, 2-7. <https://doi.org/10.1145/3505270.3558336>
14. **C. Ndulue** and R. Orji, "Games for Change - A Comparative Systematic Review of Persuasive Strategies in Games for Behaviour Change," in IEEE Transactions on Games, <https://doi.org/10.1109/TG.2022.3159090>
15. **Ndulue, C.**, Orji, R. (2022). Player Personality Traits and the Effectiveness of a Persuasive Game for Disease Awareness Among the African Population. In: Baghaei, N., Vassileva, J., Ali, R., Oyibo, K. (eds) Persuasive Technology. PERSUASIVE 2022. Lecture Notes in Computer Science, vol 13213. Springer, Cham. https://doi.org/10.1007/978-3-030-98438-0_11
16. **Ndulue, C.**, Oyebode, O., Iyer, R. et al. Personality-targeted persuasive gamified systems: exploring the impact of application domain on the effectiveness of behaviour change strategies. User Model User-Adap Inter 32, 165-214 (2022). <https://doi.org/10.1007/s11257-022-09319-w>
17. Ganesh, A., **Ndulue, C.**, Orji, R. (2022). Smartphone Security and Privacy – A Gamified Persuasive Approach with Protection Motivation Theory. In: Baghaei, N., Vassileva, J., Ali, R., Oyibo, K. (eds) Persuasive Technology. PERSUASIVE 2022. Lecture Notes in Computer Science, vol 13213. Springer, Cham. https://doi.org/10.1007/978-3-030-98438-0_7
18. Ganesh, A., **Ndulue, C.**, & Orji, R. (2021). PERMARUN- A Persuasive Game to Improve User Awareness and Self-Efficacy towards Secure Smartphone Behaviour. Conference on Human Factors in Computing Systems - Proceedings. <https://doi.org/10.1145/3411763.3451781>
19. **C. Ndulue** and R. Orji, STD PONG 2.0: Field Evaluation of a Mobile Persuasive game for Discouraging Risky Sexual Behaviours among Africans Youths, 2021 IEEE 9th International Conference on Serious Games and Applications for Health(SeGAH), 2021, pp. 1-8. <https://doi.org/10.1109/SEGAH52098.2021.9551912>
20. **Ndulue, C.**, & Orji, R. (2021). Gender and the Effectiveness of a Persuasive Game for Disease Awareness Targeted at the African Audience. UMAP 2021 - Adjunct Publication of the 29th ACM Conference on User Modeling, Adaptation and Personalization, 318-324. <https://doi.org/10.1145/3450614.3464625>
21. **Chinenye Ndulue** and Rita Orji. 2021. Heuristic Evaluation of an African-centric Mobile Persuasive Game for Promoting Safety Measures Against COVID-19. In *3rd African Human-Computer Interaction Conference (AfriCHI 2021), March 08-12, 2021, Maputo, Mozambique*. ACM, New York, NY, USA, 10 Pages. <https://doi.org/10.1145/3448696.3448706>
22. **Chinenye Ndulue** and Rita Orji. 2021. COVID Dodge: An African-Centric game for promoting COVID-19 Safety Measures. In *3rd African Human-Computer Interaction Conference (AfriCHI*

2021), March 08-12, 2021, Maputo, Mozambique. ACM, New York, NY, USA, 4 Pages. <https://doi.org/10.1145/3448696.3448726>

23. Anirudh Ganesh, **Chinenye Ndulue**, and Rita Orji. 2021. PERMARUN-A Persuasive Game to Improve User Awareness and Self-Efficacy Towards Secure Smartphone Behaviour. In CHI Conference on Human Factors in Computing Systems Extended Abstracts (CHI '21 Extended Abstracts), May 08–13, 2021, Yokohama, Japan. ACM, New York, NY, USA, 7 pages. <https://doi.org/10.1145/3411763.3451781>
24. Anirudh Ganesh, **Chinenye Ndulue**, and Rita Orji. 2021. The Design and Development of Mobile Game to Promote Secure Smartphone Behaviour. (Behaviour Change Support System Workshop at The 16th International Conference on Persuasive Technologies). <https://ceur-ws.org/Vol-2885/paper7.pdf>
25. Oladapo Oyeboode, **Chinenye Ndulue**, Dinesh Mulchandani, Ashfaq A Zamil Adib, Mona Alhasani, and Rita Orji. 2021. Tailoring Persuasive and Behaviour Change Systems Based on Stages of Change and Motivation. CHI 2021 <https://doi.org/10.1145/3411764.3445619>
26. Oyeboode, O., **Ndulue, C.**, Adib, A., Mulchandani, D., Suruliraj, B., Orji, F. A., Chambers, C. T., Meier, S., & Orji, R. (2021). Health, Psychosocial, and Social Issues Emanating From the COVID-19 Pandemic Based on Social Media Comments: Text Mining and Thematic Analysis Approach. JMIR Med Inform 2021;9(4):E22734 <https://Medinform.Jmir.Org/2021/4/E22734>, 9(4), e22734. <https://doi.org/10.2196/22734>
27. Oyeboode, O., **Ndulue, C.**, Mulchandani, D., Suruliraj, B., Adib, A., Orji, F. A., Milios, E., Matwin, S., & Orji, R. (2022). COVID-19 Pandemic: Identifying Key Issues Using Social Media and Natural Language Processing. Journal of Healthcare Informatics Research. <https://doi.org/10.1007/S41666-021-00111-W>
28. **Chinenye Ndulue**, Oladapo Oyeboode, and Rita Orji. 2020. PHISHER CRUSH: A Mobile Persuasive Game for Promoting Online Security. . Springer, Cham, 223–233. https://doi.org/10.1007/978-3-030-45712-9_17
29. Oyeboode, O., **Ndulue, C.**, Alhasani, M., Orji, R. (2020). Persuasive Mobile Apps for Health and Wellness: A Comparative Systematic Review. In: Gram-Hansen, S., Jonassen, T., Midden, C. (eds) Persuasive Technology. Designing for Future Change. PERSUASIVE 2020. Lecture Notes in Computer Science(), vol 12064. Springer, Cham. https://doi.org/10.1007/978-3-030-45712-9_13
30. **Chinenye Ndulue** and Rita Orji. 2019. Developing Persuasive Mobile Games for African Rural Audiences: Challenges implementing the Persuasive Techniques; In Proceedings of UMAP '19: 27th Conference on User Modeling, Adaptation and Personalization, June 09-12, 2019, Larnaca, Cyprus. ACM, New York, NY, USA. 6 pages. <https://doi.org/10.1145/3314183.3323857>

31. **Chinenye Ndulue**, Rita Orji. 2019. Driving Persuasive Games with Personal EEG Devices: Strengths and Weaknesses; In Proceedings of UMAP '19: 27th Conference on User Modeling, Adaptation and Personalization Adjunct (UMAP'19 Adjunct), June 9–12, 2019, Larnaca, Cyprus. ACM, New York, NY, USA. 5 pages. <https://doi.org/10.1145/3314183.3325008>
32. **Ndulue C**, Orji R 2018. STD PONG: Changing Risky Sexual Behaviour in Africa through Persuasive Games. In Proceedings of AfriCHI conference (Windhoek'18). <https://doi.org/10.1145/3283458.3283463>
33. **Ndulue C**, Orji R STD PONG: A Personalized Persuasive Game for Risky Sexual Behaviour Change in Africa. In: R. Orji, M. Kaptein, J. Ham, K. Oyibo, J. Nwokeji (eds.): Proceedings of the Personalization in Persuasive Technology Workshop, Persuasive Technology 2018, Waterloo, Canada, 17-04-2018. https://ceur-ws.org/Vol-2089/12_Ndulue.pdf
34. Nkwo M, Orji R, Nwokeji J, **Ndulue C** 2018. E-Commerce Personalization in Africa : A Comparative Analysis of Jumia and Konga. In: R. Orji, M. Kaptein, J. Ham, K. Oyibo, J. Nwokeji (eds.): Proceedings of the Personalization in Persuasive Technology Workshop, Persuasive Technology 2018, Waterloo, Canada, 17-04-2018. https://ceur-ws.org/Vol-2089/7_Nkwo.pdf

Mentorship

- | | |
|-------------|---|
| 2025 – Date | Tanveer Singh , MacEwan University, Edmonton, Canada.
<i>Undergraduate Research Intern</i>
<u>Research Project</u> : “Confidence Recognition: A Deep Learning Approach with the Mozilla Common Voice” and “SpeakSure: An AI Coach for Confident Communication” |
| 2025 – Date | Bismmeet Kaur , MacEwan University, Edmonton, Canada.
<i>Undergraduate Research Intern</i>
<u>Research Project</u> : “Exploring Reward-Based Strategies to Encourage Park and Green Space Maintenance in Saudi Arabia” |
| 2024 | Keanu Burr , MacEwan University, Edmonton, Canada.
<i>Capstone Project</i>
<u>Research Project</u> : “Bonfires - A Video Game for Promoting Healthy Diet through Retelling Greek Myth” |
| 2023 | Sussan Anukem , Dalhousie University, Halifax, Canada.
<i>Master of Computer Science (MCS)</i>
<u>Research Project</u> : “DROP DASH: A Persuasive Mobile Game to Promote Healthy Hydration Choices Using Machine Learning” |
| 2023 | Soham Sen , Dalhousie University, Halifax, Canada.
<i>Undergraduate Research Intern</i>
<u>Research Project</u> : “Boozy Gears: The Design and Evaluation of a Persuasive Game to Discourage Drunk Driving” |

- 2021 **Tata Othow**, Dalhousie University, Halifax, Canada.
Undergraduate Research Intern
Research Project: “Finchase: A Persuasive Game for Financial Literacy among African Youths”
- 2021 **Marsha Melis**, Dalhousie University, Halifax, Canada.
Undergraduate Research Intern
Research Project: “Nutri-Smober: A Preliminary Study to Investigate the Domain Dependency of Behaviour Change Strategies in Persuasive Games”
- 2021 **Anirudh Ganesh**, Dalhousie University, Halifax, Canada.
Master of Computer Science (MCS)
Research Project: “PERMARUN- A Persuasive Game to Improve User Awareness and Self-Efficacy towards Secure Smartphone Behaviour”
- 2019 **Viktoriiia Shvets**, Dalhousie University, Halifax, Canada.
Undergraduate Research Intern
Research Project: “Food Runner: A Persuasive Game to Promote Healthy Eating among Children”

Projects

STD PONG

*An African-Centric Persuasive Game for discouraging risky sexual behaviour among African Youths, developed in **Adobe Animate CC**.*

STD PONG 2.0

*An African-Centric Persuasive Game for discouraging risky sexual behaviour among African Youths, developed in **Unity**.*

Phisher Crush

*A memory match up persuasive game for promoting online security, developed in **Unity**.*

Rock Evaders

*An EEG-Controlled persuasive game for supporting stroke rehabilitation, developed in **Unity**.*

COVID Dodge

*An African-centric persuasive game for COVID-19 awareness, developed in **Unity**.*

Food Runner (Supervised)

*A persuasive game for encouraging healthy eating among children, developed in **Unity**.*

PermaRun (Supervised)

*A persuasive game for discouraging drunk driving, developed in **Unity**.*

Boozy Gears (Supervised)

*A persuasive game for discouraging drunk driving, developed in **Unity**.*

Technical Skills

Game Development (Unity 3D).

Computer Programming (C#.net, Python).

Sound and Music Production (FLStudio, LMMS).

3D Animation/Modeling (Blender)

Computer Animation (Adobe Animate CC).

Prototyping and Storyboarding (Figma, Balsamiq).

Video Production (Premiere Pro).

Graphics Design (Photoshop).

Web Programming (ASP.Net, CSS, HTML).

Database Administration (Microsoft SQL Server).