

Candace F. Williams

Education

Howard University – College of Engineering and Architecture
Bachelor of Science in Computer Science, Magna Cum Laude

August 2016 - May 2020

Research Experience

Apple Artificial Intelligence & Machine Learning Research Intern - Pittsburgh, PA

May 2021

- GEM PhD Science Fellow within Jeffrey Bigham’s Accessibility+ML Research Group

University of California, Irvine Junior Research Associate - Irvine, CA

August 2020 - Present

- Using community based, participatory design methods to create human-AI mental health interventions for HBCU and HSI students
- Creating semi-structured interview questions to examine the role of technology in university mental health services
- Designing photo elicitation study, with counselor biographies, to understand culturally relevant therapy
- Co-writing Institutional Review Board protocol with Anne Marie Piper and Northwestern University’s [Inclusive Technology Lab](#)

University of California, Irvine Research Intern - Irvine, CA

July 2020 - August 2020

- Collaborated with Lucretia Williams and Gillian Hayes in the [Social and Technological Research Group](#)
- Brainstormed possible challenges and growth opportunities for university counseling centers providing services to minoritized students
- Journey mapped the user experience of a distressed student booking a counselor online by area of specialty via mobile application
- Surveyed 36 students with a Qualtrics form to identify how Black and Latinx student navigate campus mental health resources
- Thematically analyzed survey responses and concluded a mobile application to treat mental health care wasn’t sufficient
- Iterated over a mobile UI design that allowed students to book counselors by specialty via an online calendar, while providing in crisis assistance
- Interviewed a university counselor to understand the technological, financial, and administrative challenges universities face when providing mental health services to students and get feedback on the UI mockup
- Cross-analyzed the interview, survey data, and cooperative design thinking sessions and realized the enterprise-readiness of universities needed re-evaluation based on the solutions suggested

Howard University Affective Biometrics Lab Undergraduate Researcher - Washington, DC

October 2017 - May 2020

- Designed cross platform sickle cell mobile application, using gamification and user interface design adaptation, to track sickle cell anemia symptoms and predict sickle cell crises of preadolescent patients at the Children’s National Medical Center
- Wireframed, created user stories, and storyboarded empathetic health and wellness learning tool to augment fitness trackers and current chronic disease self-management programs through an interactive storybook, facial recognition tool, and affective computing doll for patients between ages 5 and 9
- Developed user surveys and conducted focus groups to understand and evaluate Black LGBTQ+ safety for safe space recommendation system on social networking platforms

Carnegie Mellon, Human-Computer Interaction Institute Research Intern - Pittsburgh, PA

September 2019 - December 2019

- Collaborated with Vincent Aleven and Kenneth Holstein in the [Co-Augmentation, Learning, & AILab](#) to understand the challenges and design opportunities for AI tutoring systems in Black, Latinx, and Low-income (BLL) student populations
- Affinity-diagrammed & stakeholder-mapped relationships between students, parents, schools, school districts, & AI tutoring companies
- Designed a retrospective contextual inquiry to understand teachers’ experiences with AI tutors in K-12 English-language learning and Black, Latinx, and Low-income contexts
- Recruited for and conducted 6 semi-structured interviews, resulting in Excel spreadsheet of 80 interpretation notes for each
- Co-wrote the Research Design, Development, and Testing sections of the Simon Initiative ProSeed Grant Proposal “*Combining cognitive tutors with culturally relevant and social justice pedagogies to increase relevance in mathematics*”
- Recruited local Pittsburgh middle and high school teachers for the culturally relevant and social justice pedagogy study

Google AI Mentorship Program Undergraduate Researcher - New York City, NY

August 2018 - December 2019

- NLX Semantic Annotation for Text Team & People + Artificial Intelligence Research Initiative
- Analyzed the differences between “dark”, “black”, and “Black” in internet search queries to improve diversity of visual search results
- Received grant to attend the 2018 Neural Information Processing Systems (NeurIPS) Conference in Montréal, Canada

Microsoft Artificial Intelligence & Research Intern - Redmond, WA

May 2019 - August 2019

- Collaborated with Martez Mott and Meredith Ringel Morris on the [Ability Team](#)
- Analyzed 33 research studies to understand the problem spaces in VR, discover challenges people with limited mobility had using different technologies, and explore pre-existing accessibility user data
- Designed a usability study to analyze proficiency of individuals with motor-impairments performing direct manipulation tasks in VR
- Constructed Fitts Law experiment testbed for pointing, drag and drop, scaling, rotation, and steering tasks in VR using C# and Unity
- Developed velocity, acceleration, and jerk data analyzer for retrieved user motion data in each trial using R

Howard University Bioinformatics Lab Research Assistant - Washington, DC

August 2016 - May 2017

- Predicted mutation sites on DISC1 Pathway using sequence-based machine learning and structure-based modeling
- Analyzed roles of genetic variants and proteins associated with complex mental disorders and cancers

Norfolk Public Schools for Science, Technology, and Advanced Research - Norfolk, VA

August 2011 - May 2015

- Wrote two research proposals on using cellular respiration as an alternative form of energy and plant transgenics
- Conducted a literature review titled "*The Power of Google*" analyzing Google's algorithm for web crawling

Industry Experience

Google Tech Exchange Scholar - Mountain View, CA

August 2018 - May 2019

- Nine-month immersive computer science education program for 65 college students from HBCUs and HSIs
- Identified commonalities across DDoS attack datasets on Kaggle to predict future service denials by day and time using R & SQL
- Collaborated with stakeholders and the engineering team to understand customer needs, prioritize features, write documentation, and manage project timeline for music sharing application
- Drafted market and product requirements documentation, wireframes and public relations plan for an augmented reality closet

Pinterest Software Engineer Intern - San Francisco, CA

May 2018 - August 2018

- Implemented the more ideas feed underneath nonowned boards resulting in an 88 million increase in weekly pin impressions, summing to 6% of Growth Engineering's quarterly 1.5 billion impressions goal
- Ran A/B Experiments, interpreted results, and wrote documentation to support shipping or shutting down 6 experiments

Pinterest Engage Software Engineer Intern - San Francisco, CA

June 2017 - August 2017

- 1 of 6 Freshman interns selected from a pool of 500 applicants
- Prototyped the [Skin Tone Filter](#) - initially refining search results for 80,000 active users, used in 15% of all searches & by [the Duchess of Sussex, Meghan Markle, to find makeup that best suited her complexion for the Royal Wedding](#)
- Created affinity diagrams to discover the key challenges for the age 18-24 user demographic
- Designed user experience surveys and iterative prototypes prior to activating users into the experiment

Engineering for Kids Lead Instructor - Washington, DC

February 2017 - May 2017

- Consulted the Area Director in developing updated Scratch curriculum for the Washington, DC Metro Area
- Trained instructors and new hires in Scratch

Office of Congresswoman Yvette D. Clarke (NY-9) Congressional Intern - Washington, DC

January 2017 - May 2017

- Formulated computer science hackathons for the [Congressional App Challenge and House of Code](#)
- Aided in securing partnership with Essence Magazine and Angela Rye for the [Find Our Missing Girls Campaign](#) to prevent interstate sex trafficking in the Washington, DC Metro Area
- Wrote congressional "Dear Colleague", H.R. Bill, & E-Curriculum proposal for National African American Women's History Week

Boolean Girl Project Instructor - Washington, DC

January 2017 - May 2017

- Taught weekly Scratch classes for second through fifth grade at Creative Minds International Public Charter School

DMNSNZ User Experience Designer & Startup Consultant - Washington, DC

December 2016 - September 2017

- Designed user interface mockups and wireframes
- Co-developed business model

Patents Issued and Pending

Daya, R., Bhasin, L., Wang, X., Rogers, S., Williams, C.F., Kuchimpos, R., Morgan, C., Brown, L. [Skin Tone Filter](#). United States Patent US 10,891,331. United States Patent and Trademark Office. January 12, 2021.

Grants

Collaborator: *Combining cognitive tutors with culturally relevant and social justice pedagogies to increase relevance in mathematics*
Simon Initiative ProSeed Grant Proposal

Awarded : **\$14,523**; Co-written with Nikki G. Lobczowski, Kenneth Koedinger, J. Elizabeth Richey

May 2020

Academic Publications

Aryal, S.K., Williams, C.F., Rosemond, K.J., Salaam, C., & Washington, G. 2020. Self-Efficacy Sydney: An EHWLT for Young Children with Chronic Illness. *Proceedings of CHI Play '20: Work in Progress. (CHI Play '20)*. ACM.

Williams, C.F., Young, S., Cornwall, A., Washington, G. 2018. "Safe Space: Using Gamification to Provide Medical Recommendations for Sickle Cell Patients in Preadolescence." *Howard University Research Week*. Poster presentation. [Undergraduate Award in Physical Sciences and Engineering](#)

Teng, S., Buggs, S., **Williams, C.F.,** Hatton, W. 2017. "Analysis of Rare Mutations in DISC1 Pathway Implicated in Psychiatric Disorders" *Howard University Research Week*. Poster presentation.

Honors, Awards, and Fellowships

GEM PhD Science Fellowship, The GEM Consortium & Apple AI/ML 2021
OurCS@AccessComputing+CREATE Scholar, Access Computing & UW CREATE 2020
#blackcomputeHER Conference Scholar, #blackcomputeHER 2020
Black in AI Workshop Scholar, Opportunity Hub (OHUB) & Black in AI 2019
ACM UIST Symposium Scholar, UIST 2019
Grace Hopper Conference Research Scholar, Computing Research Association - Widening Participation 2019
Google Lime Scholar, Google & Lime Connect 2019
Focus Scholar, Georgia Institute of Technology 2018, 2019
Tapia Diversity in Computing Scholar, Capital One 2018
Lime Connect Fellow, Lime Connect 2018
Northrop Grumman Foundation/NSBE Integrated Pipeline Scholar, National Society of Black Engineers 2018
Rewriting the Code Fellow, Rewriting the Code 2017, 2018
Global Education and Awareness Research Undergraduate Program Scholar, NSF & Universidad Santo Tomás (Santiago, Chile) 2017
Women in Technology Scholar, Palantir 2017
Social Impact 360 Fellow, Social Impact 360 2016
CODE2040 Finalist, CODE2040 2016
Google CSSI Scholar, Google 2015
Ron Brown Captain, The Ron Brown Scholars Program 2015

Academic Service

Student Volunteer

The 21st International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2019) - Pittsburgh, PA October 2019

Invited Talks, Tutorials, and Demonstrations

Invited Speaker

Breaking into Computer Science Panel, **DigiGirlz High Tech Camp - Microsoft, Redmond, WA** August 2019

Invited Speaker

Engineering Our Way Into Inclusive Search, **/dev/color IN MOTION Conference - Facebook, Menlo Park, CA** July 2019

Invited Demonstration

Securing Internships When Feeling Behind, **Computer Science II (taught by Gloria Washington) - Howard University, Washington, DC** April 2018

Invited Tutorial

Introduction to the Ionic Framework, **Affective Computing (taught by Gloria Washington) - Howard University, Washington, DC** March 2018

Selected Press

[In the News @ UCI Donald Bren School of Information & Computer Sciences](#) July 2020
ICS Team Explores Distance-Based Mental Health Services for Minority Students

[Google Student Blog](#)

Congratulations to the 2019 Google scholarship recipients! July 2019

[W24](#)

U.S. student Candace Williams created a search feature on Pinterest that has made the internet more inclusive for black women April 2019

[Howard University Newsroom](#)

Howard University And Google Expand Successful Computer Science Residency To Include Additional HBCUs September 2018

[Howard University Electrical Engineering and Computer Science](#)

Williams Announced 2018 Research Week Winner April 2018

Licenses and Certifications

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| Biomedical Responsible Conduct of Research , Collaborative Institutional Training Initiative | 2019 |
| Social and Behavioral Responsible Conduct of Research , Collaborative Institutional Training Initiative | 2017 |
| Responsible Conduct of Research for Engineers , Collaborative Institutional Training Initiative | 2017 |
| Financial Literacy Certification , Working in Support of Education | 2013 |
| Pre-Engineering Certification , NOCTI | 2013 |

Non-Academic Publications

Williams, C.F. "Google Lime Scholar Spotlight: Candace Williams", limeconnect.com, 3 December 2019

Williams, C.F., Harris, M., Brown, M., Cooks, R. "Northrop Grumman/NSBE/HBCU Partnership Benefits Students in Year Two." NSBE 44th Annual Convention, Mar. 2018, pp. 10–10.

Williams, C.F. "Women, Who Reign: Candace Williams." Medium.com, ReigningIt, 23 Jan. 2017.

Encarnacion, J., and **Williams, C.F.** "What Do You Think About This Idea?" Web log post. LinkedIn.com. Joshua Encarnacion, 8 Mar. 2016. Web. 23 Sept. 2016.

Leadership and Development

Collaborator, No Tech for ICE Campaign March 2020 - Present

- Community organizing with Carnegie Mellon University, The Worker Agency, & Mijente

Student Organizer, Howard University COVID-19 Task Force March 2020 - April 2020

- Conducted 40 interviews & collected social media posts expressing the impact of transitioning online during COVID-19 on their academic performance, which was then used to secure the Pass/Fail grading system at Howard University
- Generated a list of student demands which resulted in disbursing of tablets to students without access to computers, 30% housing reimbursement, and virtual graduation.

Activist, StudentPowerHU & HUResist A-Building Takeover March 2018 - April 2018

- Extended the \$200 housing deposit to May 1st, 2018
- Created the ability to select and access to student ombudsperson
- Implemented Joint Student-Administration Task Force to enhance psychiatric and behavioral health services
- Requested the Board consider holding undergraduate tuition at the current level for the 2019 - 2020 academic year, and the Tuition and Fees Committee will assess tuition for the 2020-2021 academic year
- Co-created comprehensive task force to review the Howard University Department of Safety
- Developed a grievance system to hold members of the Howard University community accountable for offensive language and behavior
- Committed Howard University to providing transportation for sexual assault victims to Washington Hospital Center for rape kit examinations
- Created a mandatory 1-credit hour course to educate students on gender and sexuality and the prevention of sexual assault, harassment, and violence
- Committed Howard University to supporting and allocating funding to establish a food pantry in the LeDroit-Shaw Community
- Created a Community Development organization to allow for more inclusive community engagement on select real estate projects
- Created a Board Committee on Student Life and Affairs to provide a forum for students to convey concerns and the Howard Administration to have more dialogues with students

Member, 7th Class of the Freshman Leadership Academy August 2016 - February 2017

- Wrote the Stronger Together proposal to support Howard University Middle School of Mathematics and Science students in a day long workshop, providing guest speakers, interactive workshops, and panels on navigating America as a Black youth

Founder and President, Norview Elementary Mentor Program November 2011 - May 2015

- An initiative to restore Norview Elementary School's accreditation
- Year one - focused on critical reading with small learning groups, resulting in an 82% pass rate on the Standard of Learning exams.
- Year two - expanded from one classroom to Third through Fifth Grade.
- Years three and four - became an official program for the entire school, expanding from Pre-Kindergarten to Fifth Grade, providing leadership training to students, conflict mediation, math and reading tutoring, and technology education

Affiliations

The National GEM Consortium, AccessComputing, Engineers Without Borders, National Society of Black Engineers, The Association for Computing Machinery, Louis Stokes Alliance for Minority Participation