

Candace F. Williams

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Education

Howard University -- College of Engineering and Architecture

August 2016 - May 2020

Bachelor's of Science, Computer Science, Major GPA: 3.84

Stanford University

June 2019 - July 2019

Summer Session Visiting Undergraduate

Google Tech Exchange

August 2018 - May 2019

Nine-month immersive computer science education program for 65 college students from HBCUs and HSIs in Mountain View, CA

The College of William and Mary

August 2015 - September 2015

Joint degree program with the University of St. Andrews - Scotland, United Kingdom

International Honors Bachelor's Degree, English

Norview Senior High School, The Leadership Center for the Sciences and Engineering

September 2011 - May 2015

GPA: 4.4532

Thomas Nelson Community College

January 2014 - May 2014

Dual Enrollment Program - Introduction to Aerospace

Relevant Coursework: CS Undergraduate Research, Product Management, Applied Data Science (R), Human-Computer Interaction & User Experience, Special Topic: Adaptive Learning, Introduction to Affective Computing, Technical Writing, Database Systems (SQL)

Research Experience

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 and created user stories for empathetic health and wellness learning tool to augment fitness trackers and current chronic disease self-management programs through an interactive storybook 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
- Co-applied & pitched "*An Online Socially Assistive and Support Community for Encouraging Positive Mental Health and Empathy Amongst HBCU Students*" to receive funding from the Microsoft AI for Accessibility program
- Received the Undergraduate Award in Physical Sciences and Engineering for *Safe Space: Using Gamification to Provide Medical Recommendations for Sickle Cell Patients in Preadolescence* at Howard University Research Week 2018
- Supported by the Washington, Baltimore, Hampton Roads Louis Stokes Alliance for Minority Participation (LSAMP)

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

September 2019 - December 2019

- Collaborated with Vincent Aleven and Kenneth Holstein 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
- Co-Managed undergraduate students' implementation of the culturally relevant and social justice questions in the AI tutors

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 image 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

- Human Computer Interaction Group - [Ability Team](#) collaborating with Meredith Ringel Morris and Martez Mott

- 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 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
- Supported by the Institutional Research Program at Howard University

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

Norfolk State University Saturday Scientist Research Program - Norfolk, VA

September 2011 - June 2012

- Developed websites, learning the basics of HyperText Markup Language and Cascading Style Sheets
- Built several model rockets, roller coasters, and explored various engineering disciplines, such as optics and mechanical

Industry Experience

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
- Co-Applied for U.S. Patent: Morgan, C., Williams, C., Kuchimpos, R, 2019. System and Method for Skin Tone Range Selection. U.S. Patent Application 16/270,167. Filed February 2019. Patent pending

Pinterest Engage Software Engineer Intern - San Francisco, CA

June 2017 - August 2017

- 1 of 6 Freshman interns selected from a pool of 500 applicants
- Designed and 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
- Created 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

Academic Publications

Williams, Candace F., et al. "Safe Space: Using Gamification to Provide Medical Recommendations for Sickle Cell Patients in Preadolescence." Howard University Research Week. Howard University. Armour J. Blackburn University Center. 13 April 2018. Poster presentation.

Williams, Candace F., et al. "Analysis of Rare Mutations in DISC1 Pathway Implicated in Psychiatric Disorders" Howard University Research Week. Howard University. Armour J. Blackburn University Center. 14 April 2017. Poster presentation.

Non-Academic Publications

Williams, Candace F. “Google Lime Scholar Spotlight: Candace Williams”, limeconnect.com, 3 December 2019

Williams, Candace F., et al. “Northrop Grumman/NSBE/HBCU Partnership Benefits Students in Year Two.” NSBE 44th Annual Convention, Mar. 2018, pp. 10–10.

Williams, Candace F. “Women Who Reign: Candace Williams.” Medium.com, ReigningIt, 23 Jan. 2017.

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

Patents Issued and Pending

Morgan, C., **Williams, C.**, Kuchimpos, R, 2019. System and Method for Skin Tone Range Selection. U.S. Patent Application 16/270,167. Filed February 2019. Patent pending.

Grants

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

Under Review; Co-written with Nikki G. Lobczowski, Kenneth Koedinger, J. Elizabeth Richey

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

[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

Conferences and Programs

The Third Black in AI Workshop - Vancouver, Canada

December 2019

- Co-located with NeurIPS 2019, the workshop features a panel discussion and invited talks from prominent researchers and practitioners, oral presentations, and a poster session

The ACM Symposium on User Interface Software and Technology (UIST) - New Orleans, LA

October 2019

- Premier forum for innovations in human-computer interfaces that brings together people from diverse areas including graphical & web user interfaces, tangible & ubiquitous computing, virtual & augmented reality, multimedia, and new input & output devices.

- Grace Hopper Celebration of Women in Computing - Orlando, FL** October 2019
- The world's largest gathering of women technologists designed to bring the research and career interests of women in computing to the forefront.
- The Thirty-second Annual Conference on Neural Information Processing Systems (NeurIPS) - Montréal, Canada** December 2018
- Multi-track machine learning and computational neuroscience conference that includes invited talks, demonstrations, symposia and oral and poster presentations of refereed papers.
- ACM Richard Tapia Celebration of Diversity in Computing - Orlando, FL** September 2018
- Brought together undergraduate and graduate students, faculty, researchers, and professionals in computing from all backgrounds and ethnicities to be inspired by great presentations and conversations with leaders in academia and industry
- Howard University Research Week 2018 - Washington, DC** April 2018
- Received the Undergraduate Award in Physical Sciences and Engineering for “*Safe Space: Using Gamification to Provide Medical Recommendations for Sickle Cell Patients in Preadolescence*”
- Virginia State University’s Undergraduate Research Conference - Petersburg, VA** April 2018
- Annual symposium focused on students doing research in agriculture, science, technology, engineering, and mathematics (A-STEM), and health disparities
- Howard University Research Week 2017 - Washington, DC** April 2017
- Gave a poster presentation on “*Analysis of Rare Mutations in DISC1 Pathway Implicated in Psychiatric Disorders*”
- Google DC Hacks - Washington, DC** October 2016
- Designed the database for an improved PayPal Android application with a focus on authenticating the user
- Google Computer Science Summer Institute - Cambridge, MA** July 2015
- A month long residential academy to provide incoming college freshman with web experience
 - Developed a One-to-Many database with a focus on User Authentication for the social media website [Kitchen Fridge](#)
- Virginia Summer Residential Governor's School for Mathematics, Science and Technology - Lynchburg, VA** July 2014
- 1 of 150 students selected across the state of Virginia to do a month long immersion at Lynchburg College
 - Developed a Monte Carlo Simulation for a coin landing on each intersection of a checkerboard and utilized Excel to represent the results
- NASA Virginia Aerospace Science and Technology Scholar - Hampton, VA** November 2013
- An eight month program providing 60 high school students the opportunity to plan a manned space flight to Mars
 - Upgraded designs to Crew Exploration Vehicles and the International Space Station, through a series of technical writings, journals, and math modules
- Old Dominion University People Having Dreams Summer Program - Norfolk, VA** July 2012
- A week long summer program to provide students the opportunity to engineer and pitch a temperature security system in cars
 - Used a mercury thermometer and infrared sensor to detect humans & animals in vehicles when the inside temperature reached 100°F
 - Implemented a timer that initiates if the car is off, so the alarm wouldn't sound if a person left their car for a short period of time
- ECPI University Mobile Web Application Development Workshop - Virginia Beach, VA** August 2011
- A month long program teaching the basics of building mobile web applications
 - Used HyperText Markup Language and Cascading Style Sheets to design and integrate several websites with social media platforms
- Hermitage Foundation Museum Spring Art Exhibition - Norfolk, VA** May 2011
- Received the third place award for a set of 3 linocut prints in art showcase among middle school students across the state of Virginia

Honors, Awards, and Fellowships

#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
Ron Brown Captain , The Ron Brown Scholars Program	2015

Leadership and Development

Organizer, No Tech for ICE Campaign March 2020 - Present

- Interviewing Tech Company insiders to create an op-ed in partnership with Carnegie Mellon University & 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

- [9-Day Student takeover of Howard University's Administration Building](#)
- 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

Mentor, Ron Brown Scholar Program September 2016 - May 2017

- Supports two African American high school seniors through monthly check-ins
- Reviews college and scholarship applications for mentees in the Guided Pathway Support Program

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

Licenses and Certifications

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

Affiliations

Engineers Without Borders, National Society of Black Engineers, The Association for Computing Machinery