

Saurav Keshari Aryal

Curriculum Vitae

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July 2020

EDUCATION

- 2018 - 2020 *Howard University, Ph.D. (ABD)*
Major: Computer Science
Advisor: Gloria Washington, Ph.D.
Dissertation Title: Biometric Recognition of Human Ears Using a Mask-RCNN Model for Multi-view Segmentation.
- 2017 - 2018 *Howard University, M.S. (Thesis defense incomplete)*
Major: Computer Science
Advisor: Mugizi Rwebangira, Ph.D.
Thesis Title: Descriptive Captioning of Video Segments with Bidirectional Long Short Term Memory Networks
- 2014 - 2018 *Howard University, B.S.*
Major: Systems and Computer Science
Honors: *Magna Cum Laude*

ACADEMIC EMPLOYMENT

- May 2019 - Present **Graduate Research Assistant**, Affective Biometrics Lab, Howard University
 - *Research Projects with NSA, NSF, and NGA funding/collaboration.*
- July 2020- Present **Graduate Teaching Assistant**, UNCF Summer CS Academy.
 - *Helped underclassmen from HBCUs with introduction to data structures.*
- May 2018 - August 2018 **Undergraduate Research Assistant**, Howard University.
 - *NSF I-Corps commercialization of Senior Year Project.*
- August 2018 - May 2019 **Graduate Research Assistant**, School of Medicine, Howard University
 - *Research Project titled "Predictive Analysis of US Hospital Readmissions".*
- August 2016 - December 2017 **Undergraduate Teaching and Research Assistant**, Howard University.
 - *Project Titled "Intrusion Detection in Automobile Controller Area Networks".*
 - *Assisted Tutoring and Grading for Computer Organization I & II.*
 - *Assisted Tutoring and Grading for Machine Learning & Science of Information.*
 - *Assisted Tutoring and Grading of Computer Science II & Operating Systems.*

NON-ACADEMIC EMPLOYMENT

- May 2017 – August 2017 **Software Engineering Intern**, Server Infrastructure, Google.
 - Developed a distributed load testing framework for a large-scale user data storage.
- May 2016 – August 2016 **Software Engineering Intern**, Codejam, Google.
 - Implemented a new cheating detection pipeline for Google Code Jam competitions.
- January 2016 – May 2016 **Web Developer**, Office of Communications, Howard University.
 - Worked on utilizing Drupal CMS for improvement of Howard University websites.
- May 2015 – August 2015 **Software Engineering Intern**, Display/Video Ads, Google.
 - Coded a backend library for an Ad-effectiveness measurement product in Python.

LEADERSHIP EXPERIENCE

- August 2017 – Present **Chief Technology Officer**, SqwkMob Ad Tech uninc.
 - Managed a team of 3 developers to develop a car door-side advertising screen.
 - Developed initial screen hardware, server infrastructure, and business model.
 - Funded by NSF I-Corps for Customer Discovery and Development.
- Jan 2020 – May 2020 **Project Lead & Mentor**, Affective Biometrics Lab, Howard University.
 - NSF funded mentorship program for undergraduate interested in research.
 - Mentored and led a team of 3 undergraduate students for a research project.
 - Provided early career guidance, experience, and interview practice for mentees.
- August 2015 – May 2016 **Co-founder**, Songum uninc.
 - Co-founded a dating startup which matches users based on musical preferences.
 - Led a team of 3 developer for development of Minimal Viable Product.
 - Received \$1000 towards customer discovery and development.

HONORS AND AWARDS

- 2018 – 2020 **Graduate Assistantship Award**
 - Awarded ~ \$58,000 annually to cover tuition and stipend expenses.
- 2020 **National Security Agency Fund**
 - Awarded \$16,000 toward tuition for dissertation research towards Biometric Identification.
- 2019 – 2020 **Edmund & Maria Pioleau Award**
 - Awarded \$1,000 in scholarship from Howard University towards tuition and fees expenses.
- 2018 **Magna Cum Laude Honors**
 - Graduated B.S. in Systems and Computer Science with honors and GPA > 3.6.
- 2014 – 2018 **Founder's Scholarship Award**
 - Awarded by Howard University upon acceptance for 4 years of undergraduate study.
 - Total award valued ~ \$150,000 covering full tuition, room, board, and book stipend.

PROFESSIONAL AFFILIATIONS AND SERVICES ---

Association for Computing Machinery – Member & Former Vice President of the Howard Chapter.

Tau Beta Pi - Member

National Society of Collegiate Scholars – Member

LANGUAGE SKILLS ---

- **Python, C++, JavaScript** – Proficient
- **Java, Bash, Markup Languages** – Intermediate
- **MIPS/Assembly, Swift, Lisp, Prolog, Scheme, HDL** – Basic
- **English** – Fluent
- **Nepalese** – Native
- **Hindi** – Basic

PUBLICATIONS ---

PEER-REVIEWED JOURNAL ARTICLES AND INVITED BOOK CHAPTERS

With a supportive environment, I have been able to complete my undergraduate and PhD studies in a total of just over 6 years. As such, all articles are either in-progress or in-review. Please review the section below for manuscripts expected to be out within the next academic year.

MANUSCRIPTS IN PREPARATION/SUBMITTED FOR REVIEW ---

Aryal, S. K., Rosemond, K., Candace, W., Washington, G., Salam, Cesa. (under review). “Work-In-Progress: Self-Efficacy Sydney”. *Proceedings of ACM SIGCHI Conference on Computer-Human Interaction in Play 2020*.

Aryal, S. K., Keiller, P. (pre-submission). “Quality Control Charts for Maintaining Fidelity of a Logistic Model for Predicting Growth of COVID-19 Cases”. Expected Fall 2020

Aryal, S. K., Keiller, P. (pre-submission). “Correlating Health Privacy Regulations and e-Health Adoption”. Expected Fall 2020.

Aryal, S.K., Washington, G. (in writing). “Deeper Analysis of Bias in Ear Segmentation Performance of a Mask-RCNN model”. Expected Spring 2021

Aryal, S.K., Washington, G. (in writing). “Biometric Authentication Using Transformer Siamese Networks”. Expected Spring 2020

CONFERENCE PRESENTATIONS ---

Aryal, S. K., Thomas, Shondace., Johan Greene, & Gloria Washington (2019). *EmotiColl: Towards Understanding and Prediction of Harmful Acts by Depressed Students*. Poster presented at the *Howard University Research Week*, Washington, DC.

TEACHING EXPERIENCE

TEACHING ASSISTANTSHIPS & TUTORING

Summer 2020	CS Summer Academy , <i>UNCF</i> .
Fall 2017	Computer Science II (CSCI 102) , <i>Howard University</i> .
Fall 2017	Operating Systems (CSCI 401) , <i>Howard University</i> .
Spring 2017	Computer Organization II (CSCI 202) , <i>Howard University</i> .
Spring 2017	Machine Learning (CSCI 475) , <i>Howard University</i> .
Fall 2016	Computer Organization I (CSCI 201) , <i>Howard University</i> .
Fall 2016	Science of Information (CSCI 477) , <i>Howard University</i> .
Fall 2015	CS Bootcamp , <i>Computer Science, Howard University</i> .

TEACHING INTERESTS

Lectures: Introduction to Computer Science, Python Programming, Software Engineering, Mobile App Development, Data Structures, Algorithms, Data Science, Artificial Intelligence, Machine Learning, Object Oriented Programming, Operating Systems, Computer Organization, Modeling and Simulation, Compilers, Computer Science for non-CS majors, Information Theory, Theory of Computation.

REFERENCES

Gloria Washington, PhD
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