

# Dane A. Williamson

## CONTACT INFORMATION

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## PROFILE SUMMARY

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### Publications:

- 1 Journal Article, 1 Poster

### Selected Awards:

- Best Paper Award for the Human-Computer Interaction Thematic Area, in the context of HCI International 2019, 16-31 July 2019, Orlando, FL, USA
- Highest Ranking Junior in Department of Engineering and Computer Science, VSU
- Highest Ranking Sophomore in Department of Engineering and Computer Science, VSU
- Presidential STEM Scholar, VSU

### Grants, Scholarships & Fellowships:

- EST-Univ STEM Scholarship (amount: \$26,160.00).
- CIAA Scholarship (amount: \$5,000).
- TMCf-Apple Scholarship (amount \$25,000).
- UVA Distinguished Engineering Fellowship

### Research Interests

Machine learning, Software Engineering, Internet-of-Things (IoT), Human-Computer Interaction (HCI), Cyber-Physical Systems (CPS), Autonomous Vehicles, Explainable AI, Computer Science Education

### Teaching Experience:

- Teaching assistant/Peer tutor for multiple undergraduate Computer Science courses
- Taught multiple workshops on GitHub and Version Control using Git.

## EDUCATION

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AUG. 2020 - CURRENT    Ph.D. (UVA) University of Virginia  
Major: Computer Science  
Advisors: Matthew Dwyer & Yangfeng Ji  
GPA: 3.93/4.0

MAY 2020    B.Sc. (VSU) Virginia State University  
Major: Computer Science  
Capstone Project: *Animal Tinder* Cross Platform Mobile Application  
Advisor: Prof. Ahmed Mohammed  
GPA: 4.0/4.0

## TEACHING

JANUARY 2022 - PRESENT	Graduate Teaching Assistant, School of Engineering and Applied Science <b>University of Virginia</b> CS 6316: Machine Learning, <b>Spring 2022</b>
AUG. 2019 - MAY. 2020	Undergraduate Teaching Assistant, Engineering and Computer Science department <b>Virginia State University</b> CSCI 120: Introduction to Programming, <b>Spring 2019</b> CSCI 150: Programming I, <b>Spring 2019</b> CSCI 151: Programming I Lab, <b>Spring 2019</b> CSCI 250: Programming II, <b>Spring 2019</b> CSCI 251: Programming II Lab, <b>Spring 2019</b> CSCI 287: Data Structures, <b>Spring 2019</b> CSCI 296: Web Programmng. <b>Spring 2019</b>

## EXPERIENCE

MAY - AUG. 2021 PhD. Software Engineering Intern, Oracle Machine Learning Research Group - Burlington, MA

- Pretrained [BERT transformers](#) using internal toolkit.
- Designed and implemented Probes for knowledge and language understanding in BERT transformers.
- Evaluated model performance on [GLUE](#) benchmarks using the [Jiant toolkit](#).
- Utilized shared SLURM cluster for transformer pretraining, finetuning and evaluation.

MAY - AUG. 2019 Software Engineering Intern, Apple - Cupertino, CA

- Developed Python Desktop Application to simulate Host Stack of third party BLE Devices
- Developed Web-Scraper to populate MongoDB database with SIG Bluetooth Specifications.
- Utilized internal Python-based framework to communicate with BLE controller via HCI commands.
- Simulated BLE GATT Server using database containing specifications and HCI Commands.
- Presented to Vice-President of Wireless Organization.

AUG. 2018 - MAY. 2019 Software Engineering Intern, VSU - Petersburg, VA

- Designed and implemented Skype-add ins using ReactJS, TypeScript and NodeJS.
- Exported add-ins from web-application to desktop application using Electron.

MAY - AUG. 2018 Software Engineering Intern, IBM - Raleigh, NC

- Wrote automated end-to-end user-interface tests in Protractor Framework for Watson Content Hub.
- Utilized JavaScript/TypeScript to conduct automated API testing in Staging and Production environments.
- Configured Continuous Integration (CI) testing jobs with Jenkins pipeline builds for Docker and NPM registries.

AUG. 2017 - MAY. 2018 Software Engineering Intern, VSU - Petersburg, VA

- Worked within a team to design and implement chat-bots within the Skype-Bot framework using C#.
- Collaborated and reported regularly with Microsoft/Skype engineers who supervised the project.
- Utilized version control systems to maintain and develop code in a shared repository.

## SKILLS

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### Technical Skills:

- Bluetooth Low Energy (BLE)
- Ubuntu, Kali Linux, Linux Mint
- Regression Analysis
- Cloud Services: Microsoft Azure, Heroku, IBM Cloud, Firebase
- C, C++, C#, Java, Swift
- Version Control, Asynchronous Programming
- DevOps: Git, Docker, Jenkins
- User Interface Design, User Experience
- Software Engineering, Software Unit Testing
- JavaScript, TypeScript, Python, MATLAB, R, Shell-Scripting
- Simulink, UPPAAL, ROS
- PyTorch, TensorFlow, SLURM
- HTML, CSS, PHP, SQL, XML, MongoDB, Firebase
- NodeJS, ReactJS, Electron, Flutter, Dart

## LEADERSHIP AND MEMBERSHIP

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- President of Association of Computing Machinery (ACM) - VSU Chapter      2016-2020
- Member of National Society of Black Engineers (NSBE) - VSU Chapter      2016-present

## PROJECTS

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- [Google Chrome Browser Extension to detect misinformation in web content \(2021\)](#)
- [Multimodal-Movie Genre Prediction Model which fuses the output of pre-trained BERT text classifiers and ResNet image classifiers. \(2020\)](#)
- [Coupons is a Skype-Certified add-in written in ReactJS which integrates web-services and API functionality into conversation to help users locate and share the latest deals. \(2018\)](#)
- [ArdVark is a command-line application written in C++ which uses the packet sniffing capabilities of the winsock library to monitor network activity. \(2018\)](#)

## LIST OF PUBLICATIONS

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### Summary

- 1 Journal Entry.
1. G. Cowart, D. Williamson, N. Farhat and JS. Lee, 'Do Humans STILL Have a Monopoly on Creativity or Is Creativity Overrated?', Human-Computer Interaction. Perspectives on

Design - Thematic Area, HCI 2019, Held as Part of the 21st HCI International Conference, HCII 2019, Orlando, FL, USA, July 26-31, 2019, Proceedings, Part I.

## REFERENCES

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**Ahmed F. Mohammed**

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