Dane A. Williamson

CONTACT INFORMATION

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PROFILE SUMMARY

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

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 **University of Virginia** CS 6316: Machine Learning, **Spring 2022**
Aug. 2019 - May. 2020	Undergraduate Teaching Assistant, Engineering and Computer Science department **Virginia State University** CSCI 120: Introduction to Programming, **Spring 2019** CSCI 150: Programming I, **Spring 2019** CSCI 151: Programming I Lab, **Spring 2019** CSCI 250: Programming II, **Spring 2019** CSCI 251: Programming II Lab, **Spring 2019** CSCI 287: Data Structures, **Spring 2019** CSCI 296: Web Programmming. **Spring 2019**

EXPERIENCE

May - Aug. 2022 PhD. Research Intern, Oracle Machine Learning Research Group - Burlington, MA

- Developed Named Entity Extraction System for Oracle Intelligent Document Recognition.
- Implemented 2 Dimensional Positional Embeddings to leverage document layout information.
- Introduced Special tokens to BERT tokenizer to prevent fragmentation of numerical tokens.
- Improved F-1 Score on identifying 29/36 Entities over Conditional Random Fields (CRFs).

May - Aug. 2021 PhD. Research 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

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

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

PROJECTS

- 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

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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