

Rafael Veras

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AWARDS

W.R. Smith Thesis Award, Doctoral
Ontario Tech University

Best Paper Honorable Mention
ACM CHI 2019

Science Without Borders Scholarship
Government of Brazil – 2013-2017

Italian Cultural Centre of Durham
Scholarship
2011 and 2013

UOIT Dean Scholarship
2013-2017

NSF Student Travel Support
IEEE Visweek 2010

TECHNICAL

Languages

R, Python, JavaScript, Processing, Java,
SQL

Libraries

D3.js, ggplot2, vue.js, scikit-learn,
Pandas, Numpy

Methods

Hypothesis testing, GLMMs, statistical
simulation, crowdsourcing, parallel
computing, 3D printing.

Last updated 09.20.2021

INTRODUCTION

Versatile researcher with solid grasp of computer science fundamentals and HCI methods. My core background is in information visualization. More recently, I have been investigating mid-air input (home and car settings) and assistive driving technologies. I enjoy working on projects that have both business and academic impact.

PROFESSIONAL EXPERIENCE

Huawei Technologies Mar 2019 – Present
Researcher, Human-Computer Interaction Toronto, ON

- Led research project on understanding the effect of posture on mid-air gesture input in restful, casual settings.
- Designed gestural interaction models and accompanying GUIs for automotive infotainment systems.
- Prototyped and tested assistive driving technologies for semi-automated vehicles.
- Built tools for guiding collection of naturalistic video data for gesture recognition models. Organized large data collection efforts.
- Built tools for efficient semi-automatic (AI-supported) labelling of video data for training computer vision models.
- Trained single-shot object detection (deep learning) models and image classification models for hand tracking and hand pose classification (MobileNet, YOLO).

Microsoft Research Jul – Oct 2017
Research Intern Redmond, WA

- Built a visual analytics tool to help control the quality of sentences spoken by an AI-powered chatbot.

Ontario Tech University 2011 – 2018
Teaching Assistant Oshawa, ON

- I was the TA for the Human-Computer Interaction and Information Visualization courses.

Rede de Informatica Jun 2010 – Jul 2011
Research Engineer Belém, Brazil

- Designed and developed new visualization components for the PRISMA visualization suite. Wrote successful grants for research projects (government funded).

EDUCATION

Ontario Tech University

Graduated Feb 2019

Thesis: Visual Encoding Quality and Scalability in Information Visualization

Advisor: Dr. Christopher Collins

PhD, Computer Science

Ontario Tech University

Graduated Aug 2013

M.Sc, Computer Science

Universidade Federal do Pará

Graduated May 2011

B.Sc, Computer Science

PUBLICATIONS

- [1] **Veras, Rafael** et al. "Elbow-anchored interaction: designing restful mid-air input". In: CHI Conference on Human Factors in Computing Systems. ACM. 2021.
- [2] **Veras, Rafael**, Christopher Collins and Julie Thorpe. "A large-scale analysis of the semantic password model and linguistic patterns in passwords". In: ACM Transactions on Privacy and Security 24.3 (Apr. 2021).
- [3] **Veras, Rafael** and Christopher Collins. "Discriminability tests for visualization effectiveness and scalability". In: IEEE Transactions on Visualization and Computer Graphics 26.1 (Jan. 2020), pp. 749–758.
- [4] **Veras, Rafael** and Christopher Collins. "Saliency deficit and motion outlier detection in animated scatterplots". In: CHI Conference on Human Factors in Computing Systems. ACM. 2019.
- [5] **Veras, Rafael** and Christopher Collins. "Optimizing hierarchical visualizations with the minimum description length principle". In: IEEE Transactions on Visualization and Computer Graphics 23.1 (2017), pp. 631–640.
- [6] Santiago Bonada, **Veras, Rafael** and Christopher Collins. "Personalized views for immersive analytics". In: ISS Workshop on Immersive Analytics. ACM. 2016, pp. 83–89.
- [7] **Veras, Rafael**, Christopher Collins and Julie Thorpe. "On semantic patterns of passwords and their security impact". In: Network and Distributed System Security Symposium. 2014.
- [8] **Veras, Rafael**, Erik Paluka, Meng-Wei Chang, Vivian Tsang, Fraser Shein and Christopher Collins. "Interaction for reading comprehension on mobile devices". In: Int. Conf. on Human-computer Interaction with Mobile Devices & Services. MobileHCI '14. ACM. 2014, pp. 157–161.
- [9] **Veras, Rafael**, Julie Thorpe and Christopher Collins. "Visualizing semantics in passwords: The role of dates". In: IEEE Symposium on Visualization for Cyber Security. 2012, pp. 88–95.