

Carlos V. Paradis

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Summary

PHD STUDENT

I am a Computer Science/Machine Learning PhD student under **Dr. Still** and **Dr. Kazman**, funded by the National Science Foundation to investigate applications of information theoretic clustering in large corpora for cyber-security threat mitigation. I served as a teacher assistant at the University of Hawaii at Manoa and also work part-time providing data analytics insight to solar energy self-sustainable buildings, through weather, plugload and energy consumption sensor analysis, and thermal comfort prediction.

MS STUDENT

I worked on data analytics for renewable energy applications for my Ms in Computer Science (GPA 4.0/4.0) and part-time on Software Engineering Econometrics. My Ms was funded by a private electric company in Hawaii and the National Science Foundation. I volunteered on my free time to Brazil's Open Knowledge Chapter Open Spending project as a data analyst, Brazil's Science Without Border Network as a collaborator and to IEEE HKN as a Pledge.

UNDERGRADUATE STUDENT

I was the recipient of a full-time scholarship to study in the USA for one year as part of a Brazilian government program (GPA 3.92/4.0) and through this program was awarded a Ms Degree in Software Engineering. During that year duration, I worked as a summer intern at *NASA Ames Research Center*, followed by a 6 month contract and recognized honors at UPE (<http://upe.acm.org>) and Highest Honors Bloomsbury. I was also awarded the Featured Student Brazilian Computer Society prize, which recognizes outstanding computer science undergraduates among my countrymen (Highest GPA 9.5/10.0 of the program - 482 students). I was also the founder and chair of the first and only student chapter of ACM in my country, having it featured on XRDS.



EDUCATION

U. OF HAWAII AT MANOA PHD IN COMPUTER SCIENCE

Dissertation Topic: TBD
 Fall 2016 - ? | Honolulu, HI
 Cum. GPA: 4.0/4.0

NSF CC Grant (All Semesters)

MS IN COMPUTER SCIENCE

Thesis Topic: Solar Forecasting
 Spring 2016 | Honolulu, HI
 Cum. GPA: 4.0/4.0

NSF Grant (All Semesters)

Private Funding (RA-ship Overload - 40h)

STEVENS INSTITUTE

EXCHANGE STUDENT (2012)

Conc. in Software Eng. & HCI
 Awarded MS in Software Eng.
 Fall 2014

Cum. GPA: 3.92 / 4.0

SWB Scholarship (2012)

NASA Intern | Mountain View, CA

UPE & Bloomsbury Highest Honors

SELECTED RESEARCH EXPERIENCE

U. OF HAWAII AT MANOA & U. OF MARYLAND | GRADUATE RESEARCH

May 2016 – Present | Honolulu, HI

Working with **Dr. Kazman** and **Dr. Wang** on using social network analysis and topic modeling and probability distribution similarity measures to identify, track and prioritize cybersecurity threats in a large, diversified corpora. My role in the group consists of overseeing master students work, investigating and applying text mining algorithms that realize the project vision.

U. OF HAWAII AT MANOA | GRADUATE RESEARCH

Mar 2016 – Present | Honolulu, HI

Under the supervision of sustainability specialist **Eileen Peppard**, and energy efficiency specialist **Jim Maskrey** in the Environmental Research and Design Lab (ERDL), I am evaluating options to create and display a dashboard which shows the energy consumption and environmental data of two net-zero energy buildings. The buildings will be sub-metered to track energy consumption and equipped with sensors to collect environmental conditions. To reach Net-Zero, I will also be integrating energy use predictions as input to the dashboard to help the building occupants determine if they will achieve net-zero energy by the end of the calendar year.

EDUCATION (CONT.)

U. FEDERAL DA BAHIA

BS IN COMPUTER SCIENCE

Grad. Nov. 2013 | Bahia, Brazil

Conc. in Software Econometrics

Cum. GPA: 9.5 / 10.0

Highest Major GPA

(482 Students, All Semesters)

CNPQ Scholarship (All Semesters)

BCS Distinguished Student Award

ACM Student Chapter Chair (Ft. XRDS)

Accepted as Temporary Faculty

HONORS

ACM UPE

IEEE HKN (Pledge)

Brazilian Computer Society

Highest Honors Bloomsbury

Golden Key

COURSEWORK

Data Viz. in Journalism with D3.js

Apache Spark Verified edX XSeries

Social Network Analysis

Databases + Praticum

Data Warehousing

Data Mining

Statistics

SKILLS

PROGRAMMING

Over 5000 lines:

R • ggplot2 • knitr • Python

PostgreSQL • MySQL • \LaTeX

Over 1000 lines:

MATLAB • C • C++ • Java

pySpark (Verified edX XSeries)

Familiar:

Shell • D3.js

TOOLS

Excel • LimeSurvey • Weka

U. OF HAWAII AT MANOA & SIEMENS | GRADUATE RESEARCH

Aug 2015 – Present | Honolulu, HI

Working with **Dr. Kazman** and **Dr. Mauerer** on associations between software companies organizational structure and their software products. Created scripts to calculate metrics from version control systems, issue trackers and static metrics to evaluate motifs on code collaboration social networks and discussion social networks.

U. OF HAWAII AT MANOA & HECO | GRADUATE RESEARCH

Jan 2015 – May 2016 | Honolulu, HI

Worked with **Dr. Lim**, **Dr. Stevens** and **HECO** on Data mining/analytics of weather related data for renewable (solar) energy management in Hawaii. I created a pipeline to harvest data from various sensors across Hawaii, scrape associated metadata through websites and several visualizations to identify missing or biased values through multiple years. Clustering methods to address time series granularity, probabilistic and linear models were also used to forecast solar irradiation on different sites using climate data and satellite data. Early results were published in ICMLA 2015 [5], and final results as my Master Thesis.

Jan 2015 – Aug 2015 | Honolulu, HI

Worked with **ScD. Fan** on analysis of cross-sectional surveys conducted in Ethiopia by DHS to identify effects between sanitation and malnutrition. Assigned duties included systematic review (Database search, Snowballing and Inverse Snowballing), Survey Data Pre-Processing / Cleaning and Correlation Analysis of variables of interest.

U. OF HAWAII AT MANOA & ROCHESTER U. | GRADUATE RESEARCH

Aug 2014 – May 2015 | Honolulu, HI

Working with **Dr. Kazman** and **Dr. Mirakhorli** in investigating how software engineers conduct web searching for a particular class of code snippets by (1) defining a suitable set of metrics to the problem space from literature review, (2) performing quantitative and qualitative data analysis to assess the chosen metrics usefulness for a software developer, (3) incorporate the set of metrics to a bigger set and evaluate prediction performance on recommending code snippets.

U. OF HAWAII AT MANOA & DREXEL U. | UNDERGRAD RESEARCH

Jan 2012 – Nov 2013 | Honolulu, HI

Worked with **Dr. Kazman** and **Dr. Cai** to identify patterns of effort in software using R and Python. Activities consisted of Data Gathering (website, .xml, .csv, .xlsx), storage (PostgreSQL), and Reports based on Exploratory Data Analysis, Clustering Algorithms and Classification Algorithms. Work was further published as a journal [2].

U. FEDERAL DA BAHIA - FORMAS | UNDERGRAD RESEARCH

May 2013 – November 2013 | Bahia, Brazil

Worked with **Dr. Claro** and colleagues in identifying patterns that would lead to STEM Student Retention in U. Federal da Bahia. Activities consisted of Data Gathering (PDF format transcripts), storage (definition of schema and population of a PostgreSQL database), Exploratory Data Analysis, Association Rule Learning and Literature Review. Proposed enhancements on recommended coursework were further published [4].

U. FEDERAL DA BAHIA | UNDERGRAD RESEARCH

May 2012 – November 2012 | Bahia, Brazil

Worked with **Dr. Mendonça** and **Amancio Santos** in analyzing Eclipse IDE usage by capturing point and click on logs. Activities consisted of data collection (.csv) by eclipse plugins, Exploratory Data Analysis and Process Mining. Results were further published [3].

U. FEDERAL DA BAHIA - RISE LABS | UNDERGRAD RESEARCH

November 2009 – May 2011 | Bahia, Brazil

Worked with **Dr. Almeida** and **Dr. Machado** in verifying the effectiveness of a new methodology for teaching C to freshman Computer Science students. Activities consisted of defining Surveys, Exploratory Data Analysis, and Correlation Analysis, published in [1].

TEACHING EXPERIENCE

PROFESSOR | VOLUNTEER

2013-2014 | Brazil

At Universidade Federal da Bahia, Brazil, I taught Databases Lab, as well as Data Structures and Information Retrieval to Information Systems students. I used a combination of Latex, "hand-made" Tikz forms, color, and other visual examples to illustrate abstract concepts in **slides** for freshman, together with **lecture notes**.

TEACHER ASSISTANT | VOLUNTEER

Past | Brazil

I was **previously** a teacher assistant in Shidler School of Business on a PHP introductory class under Dr. Kazman. While a student at Universidade Federal da Bahia, I've also worked as a undergraduate teaching assistant for Formal and Automata Languages, Programming Logic for Computer Science, and Paradigms of Programming Languages. In all three classes I gave lectures under supervision of the professor, assisted in creating material and grading, and organized guests coding dojos for the class.

VOLUNTEER EXPERIENCE

FISCAL BUDGET IN BRAZIL | VOLUNTEER

October 2015 – Feb 2016 | Brazil

I volunteered as a data analyst for the **Open Spending team of Open Knowledge Brazil Chapter**, which was a finalist on **Google Impact Challenge in Brazil**.

The project goal is ambitious, and seek to analyze the city and state of São Paulo, and also the federal's fiscal year budget, serving as case study to implement the same method and tools to other cities. Mainly, the project seeks to read between the government's budget lines and understand where tax money is being spent. My role in the team is to find, explore, pre-process, and analyze Brazil's Fiscal Year Budget. Across the promised outcomes, my role more closely relates to help crafting stories, or by finding and exploring what data is available, help shape the presentation of it through the website and/or API. I am also exploring in parallel the open spending of Salvador, another city in Brazil and my hometown as both city and state's budget data availability and organization vary considerable across the country.

ASSOCIATION FOR COMPUTING MACHINERY | CHAIR OF STUDENT CHAPTER

August 2010 – June 2011 | Bahia, Brazil

I founded the first and only ACM student chapter of Brazil. Main chapter activities were initially focused on raising awareness (not well known in Brazil) and supporting local computer science events. The chapter was featured on XRDS, the student magazine of ACM on it's first semester.

SCIENCE WITHOUT BORDERS NETWORK "REDE CSF" | VOLUNTEER

September 2015 – Current | Brazil

Rede CsF is a non-profit organization based in Brazil and created by students who were awarded the Science Without Border scholarship from Brazil government. The non-profit is a return on investment to create projects in the country to improve Science, Technology, Innovation and Education. Within the network, I collaborate on the Open Data Awareness Project and the Intranet, the later to coordinate over 40 contributors activities.

PUBLICATIONS

- 5 C. V. A. Silva, L. Lim, D. Stevens and D. Nakafuji, "Probabilistic Models for One-Day Ahead Solar Irradiance Forecasting in Renewable Energy Applications," 2015 IEEE 14th International Conference on Machine Learning and Applications (ICMLA), Miami, FL, USA, 2015, pp. 1163-1168. doi: 10.1109/ICMLA.2015.137. **Online Access.**
- 4 SILVA, C. V. A. ; SANTOS, M. S. ; Claro, D.B. ; Silva, Veronica ; SILVA, M. ; RIBEIRO, S. ; TELLES, A. R. ; LOPES, D. . Mining Retention Rules from Student Transcripts: A Case Study of the Information Systems programme at a Federal University. Anais do Simpósio Brasileiro de Informática na Educação, v. 1, p. 1, 2013. **Online Access.**
- 3 SANTOS, JOSÉ A. M. ; DE MENDONÇA, MANOEL G. ; SILVA, CARLOS V. A. . An exploratory study to investigate the impact of conceptualization in god class detection. In: the 17th International Conference, 2013, Porto de Galinhas. Proceedings of the 17th International Conference on Evaluation and Assessment in Software Engineering - EASE '13. New York: ACM Press, 2013. p. 48. **Online Access.**
- 2 Martin Naedele, Hong-Mei Chen, Rick Kazman, Yuanfang Cai, Lu Xiao, Carlos V.A. Silva , Manufacturing execution systems: A vision for managing software development, Journal of Systems and Software, Volume 101, March 2015, Pages 59-68, ISSN 0164-1212, http://dx.doi.org/10.1016/j.jss.2014.11.015. **Online Access.**
- 1 ALMEIDA, E.S ; MACHADO, I. C. ; SILVA, C. V. A. ; GOMES, G. S. S. . Teaching Software Engineering Fundamentals in an Introductory Computer Programming Course. In: IV Fórum de Educação em Engenharia de Software (FEES), 2011, São Paulo. XXV Simposio Brasileiro de Engenharia de Software (SBES), 2011. **Online Access.**