Alceu Ferraz Costa

PhD Candidate (Computer Science)

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Summary

I am a PhD student in Computer Science at the University of São Paulo (USP) in Brazil. Part of my ongoing PhD project included a visiting period of one year at Carnegie Mellon University. Currently, I am researching data mining techniques to detect bots and fraudsters on social media based on temporal data. I am also working on modeling information cascades and user communication behavior.

Education

2012–Present   **PhD in Computer Science**, *University of São Paulo*, Brazil.
My ongoing PhD project focuses on developing data mining techniques for social media. My partial results include a method to detect bots and anomalies based only on timestamp data. The results were published in the ACM KDD conference.

2010–2012   **MSc in Computer Science**, *University of São Paulo*, Brazil.
Developed computer vision methods applied to the domain of Computer-Aided Diagnosis (CAD) systems. The MSc project was funded by a FAPESP scholarship and resulted in publications in the SIBGRAPI conference as well open-sourced software.

2005–2009   **BE in Computer Engineering**, *University of São Paulo*, Brazil.
Conducted two Undergraduate Research Project funded by CNPq scholarships and an internship as Software Developer at Daitan Group.

Experience

2011–2015   **Teaching Assistant**, *University of São Paulo*, Brazil.
Was teaching assistant for the following courses: Computers and Society (SCC-207), Computer Graphics (SCC-650), Large Scale Data Mining (SCC-244). My responsibilities included preparing course material, presenting lectures, grading tests and assisting students on their lecture and homework questions.

2013–2014   **Visiting Scholar**, *Carnegie Mellon University*, Pittsburgh, PA.
Developed a data-mining method to analyze social media data. Results include the development of a crawler (**Python**) to collect user activity data from different social media services and a technique to detect suspicious users (bots and spammers) based on the mathematical modeling of human communication behavior.

2013–Present   **Journal Reviewer**, *Multimedia Tools and Applications (MTAP)*.

2009   **Software Development Intern**, *Daitan Group*, Campinas, Brazil.
Participated on the development of network management tools (C/C++), Web services (SOAP and REST APIs using J2EE and TDD).

2006-2008   **Undergraduate Research Project**, *University of São Paulo*, Brazil.
Received a scholarship from National Counsel of Technological and Scientific Development (CNPq). Research topics included computer vision, medical imaging and content based image retrieval.

Technical Skills

Machine Learning: Classification, clustering, anomaly detection

Computer Vision: Feature extraction, automatic image annotation, image processing

Programming: Matlab, Python (numpy, scipy, scikit-learn, jupyter), C/C++

Publications

Referred Conferences

[C1] Alceu Ferraz Costa, Agma Juci Machado Traina, Caetano Traina Jr., and Christos Faloutsos. Vote-and-Comment: Modeling the Coevolution of User Interactions in Social Voting Web Sites. In *IEEE International Conference on Data Mining (ICDM)*, pages 1–10, Barcelona, Spain, 2016. IEEE.

[C2] Mirela T. Cazzolato, Marcos Vinicius Naves Bedo, Alceu Ferraz Costa, Jessica Andressa de Souza, Caetano Traina Jr., and Agma Juci Machado Traina. Unveiling smoke in social images with the SmokeBlock approach. In *ACM SAC*, pages 49–54, Pisa, Italy, 2016. ACM.

[C3] Alceu Ferraz Costa, Yuto Yamaguchi, Agma Juci Machado Traina, Caetano Traina Jr., and Christos Faloutsos. RSC: Mining and Modeling Temporal Activity in Social Media. In *ACM KDD*, pages 1–10, Sydney, Australia, 2015.

[C4] Marcos Vinicius Naves Bedo, Gustavo Blanco, Willian Dener De Oliveira, Mirela Teixeira Cazzolato, Alceu Ferraz Costa, José Fernando Rodrigues Jr., Agma Juci Machado Traina, and Caetano Traina Jr. Techniques for Effective and Efficient Fire Detection from Social Media Images. In *ICEIS*, pages 34–46, Barcelona, Spain, 2015.

[C5] Alceu Ferraz Costa, Agma Juci Machado Traina, and Caetano Traina Jr. MFS-Map: efficient context and content combination to annotate images. In *ACM SAC*, pages 945–950, Gyeongju, Korea, 2014.

[C6] Alceu Ferraz Costa, Gabriel Humpire-Mamani, and Agma Juci Machado Traina. An Efficient Algorithm for Fractal Analysis of Textures. In *Conference on Graphics, Patterns and Images (SIBGRAPI)*, pages 39–46, Ouro Petro-MG, Brazil, 2012.

Scholarships and Awards

2015   KDD Travel Award to present my paper at the conference.

2013   FAPESP Research Internship Abroad, 13/14040-4.

2013   Travel Grant for EMC Summer School on Big Data

2012   FAPESP Ph.D. Scholarship, 12/00005-0.

2010   Travel Grant for São Paulo Advanced School of Computing (SP-ASC)

2010   FAPESP M.Sc. Scholarship, 09/12905-2.