

Mauricio Soto, Ph.D.

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SUMMARY

R&D Engineer with 10+ years of experience in machine learning, software research, analytics, and development. PC Member of 4 international conferences, 10+ publications, international speaker/panelist, fluent in 3 languages. Strong leadership, collaboration, and communication skills; work in groups, innovation and problem solving.

EDUCATION

Carnegie Mellon University, School of Computer Science	Ph.D. in Software Engineering	2021
Carnegie Mellon University, School of Computer Science	M.Sc. in Software Engineering	2018
University of Costa Rica, School of Computer Science	B.Sc. in Computer Science	2013

PROFESSIONAL EXPERIENCE

Senior Machine Learning R&D Engineer | *Hitachi ABB Power Grids, NAMTC* Aug 2020 – Present (8 months)

- Design and deploy machine learning models based on time series sensor data to support third party clients
- Project leader in charge of goal planning, time distribution, budget, and reporting to corporate executives

Software Engineering Researcher | *Carnegie Mellon University, SCS* Aug 2014 – May 2021 (7 years)

- Created ML association rules describing human code changes to inform automatic program repair approach
- Designed and implemented ML models for 2-factor user authentication using keystroke dynamics
- Analyzed and evaluated the role of test suite characteristics in the automated repair process

Research Scientist | *ABB Research Center, US Corporate Office* May 2019 – Aug 2020 (1.5 years)

- Led machine learning project creating models to predict productivity indicators from biometric data
- Designed, simulated and tested 3D components creating prototype of automatic wiring robot
- Designed, implemented, and tested interaction mechanisms to ease programming of collaborative robots

Software Developer II | *Experian, Credit Score Reporting Services* Aug 2013 – Aug 2014 (1 year)

- Increased end-user security by building identity theft prevention software in collaborative agile team

Webmaster | *Mathematics and Meta-Mathematics Research Center* Feb 2010 – Aug 2014 (4.5 years)

- Led research center's development team of five software engineers to create reliable end-user websites

Web Developer | *Rutgers University, Sonny Werblin Center* Feb 2013 – Sep 2013 (6 months)

- Developed and deployed online test-taking and facility evaluation university-wide scalable applications

Software Developer | *Intel Corporation* Feb 2012 – Jan 2013 (1 year)

- Redesigned a calendaring application in C#, development and deployment to production

TECHNICAL SKILLS

Machine Learning: scikit-learn, scipy, pandas, Un/Supervised, R, Weka, NLP, Deep Learning, Clustering
Programming Languages: Java, Python, C#, Bash, LaTeX, Scala, C, C++, SQL, PHP, UML, XML, HTML, CSS, RAPID
Frameworks/Tools: Azure, AWS, Jupyter Notebooks, R Studio, Git, Travis CI, Junit, Visual Studio, RobotStudio
Language skills: Fluent in English, Spanish, and Portuguese

SELECTED PUBLICATIONS (Full list of publications: <https://mausotog.github.io/#research>)

- Soto et al. "Observing and Predicting Knowledge Worker Stress, Focus and Awakeness", IJHCS 2021
- Motwani et al. "Quality of Automated Program Repair on Real-World Defects", TSE 2020
- Soto et al. "Applying Data Science to Improve Solar Power Production and Reliability", INFORMS 2019

PROFESSIONAL SERVICE AND AWARDS

- Recognized as "Individual with Exceptional Ability in the National Interest", United States Government, 2020
- Program Committee Member: ESEM'20, MSR'20, EMSE'19, MSR'19; Volunteer: ASE'19, SPLASH'15
- Mentoring: 2 Teaching Assistantships, 1 PhD Intern, 2 REU Students, 4 Groups of High School Students
- Representative to Google (CMU Rep), to SHPE (ABB Rep), and to the CMU Diversity Council (Grad Student Rep)