JUAN M. FONSECA-SOLÍS

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EXPERIENCE

Avantica Technologies 06/18 – present — San José, CR
Software quality assurance engineer II

· Delivered high-quality products for clients dedicated to image publishing and credit score services.
· Developed internal trainings for API manual/automated testing using state-of-the-art tools.
· Provided insights for audio and video quality metrics (PESQ, among others) and WebRTC.

Universidad de Costa Rica 09/16 – 12/17 — San José, CR
Research Scientist at Research Center on Information and Telecomunication Technologies (CITIC)

· Developed algorithms for audio signal processing under the guidance of psychoacoustic experts.
· Implemented a Java consumable APK for recognizing the sound of accessible pedestrian signals (APS), available at `https://play.google.com/store/apps/details?id=ucr.citic.rasp`.

Avantica Technologies 11/13 – 09/16 — San José, CR
Software quality assurance engineer

· Delivered high-quality products for an amazing crew whose lemma was "helping people make better health decision".
· Executed and estimated test cases at different levels: integration, regression, web-services, performance, security, and accessibility (WCAG 2.0).
· Automated UI test cases using Selenium WebDriver in C# and took care of the CD/CI pipeline. Developed an internal application for sanitizing beacons that saved hours of frustration to the team.

Universidad de Costa Rica 03/14 – 07/14 — San José, CR
Teaching Assistant, sound processing course CI2813

· Coordinated course projects and assisted 12 students in their assignments.

Smartsoft Int. 07/13 - 11/13 — San José, CR
Software engineer

· Developed .Net applications for banking, consumed REST and SOAP services.

EDUCATION

Instituto Tecnológico de Costa Rica (TEC) *01/16 - 07/18 — Cartago, CR*
M.Sc. in electronics with emphasis in digital signal processing. Overall GPA: 3.6/4.0

Universidad de Costa Rica (UCR) *03/07 - 06/13 — San José, CR*
Bs in computer science and informatics.

TECHNICAL STRENGTHS

Proficient with	C/C++, C#, Bash, Python, MATLAB, Java, LaTeX, SQL.
Familiar with	JS/HTML/CSS, Intel Assembler, Verilog, Prolog.
Tools	Linux (vim, autotools, valgrind, GBD, QEMU), Git, OpenCV, Selenium WebDriver, SoapUI, Postman, RestAssured, SQL server, Oracle SQL Developer, MySql, Jenkins.
Libraries	Android SDK, Numpy, Scipy, Matplotlib, RESTful/SOAP, JUnit, OpenMP.
Numerical tools	Fourier transform, Z transform, filter design, PCA, Mahalanobis, SVD, psychoacustics, Wiener filters, Kalman filters, K-means, Naive bayes, MFCC, CNN, HMM.

RELEVANT COURSES

CS

Operating systems
Artificial intelligence
Software engineering I & II
Computer networks
Databases I & II
Computer architecture
Compilers and automatas
Probability and statistics
Calculus I-III
Operations research
Linear algebra

EE

Digital signal processing
Digital image processing
Embedded systems
Computer vision
FPGA prototyping
Sound processing
Functional analysis and LO theory
Pattern recognition
Adaptive signal processing

VOLUNTEER EXPERIENCE

- Jan-Apr 13. Developed the first webpage for ACAI, the costarican implementing agency of the United Nations High Commissioner for Refugees (UNHCR). Technologies used: Drupal, CSS, HTML 5. URL: `http://www.acai.cr/sitioweb/`.

MASSIVE OPEN ONLINE COURSE (MOOC)

- Digital Signal Processing, École Polytechnique Fédérale de Lausanne. Aug 2018. License: Y4TSW9PA3SS3.
- Introduction to Embedded Systems Software and Development Environments, University of Colorado Boulder, Jul 2018. License: A3UNMYW48L4F.
- Programming Mobile Applications for Android Handheld Systems: Part 1 & 2, Computer Science Department, University of Maryland, Feb-Apr 2017. Licenses: WE959Z2968U4 and 45R4J2TCZULK.

PUBLICATIONS

- Author. *Accessible pedestrian signals recognition using an adaptive approach.* Escuela de electrónica. TEC. Cartago, CR. 2018. Master thesis. `https://repositoriotec.tec.ac.cr/handle/2238/11099`.
- Co-author. *Automatic recognition of accessible pedestrian signals.* The Journal of the Acoustical Society of America 141. 3913. Boston, USA. 2017. `https://doi.org/10.1121/2.0000675`.
- Co-author. *Automatic recognition of accessible pedestrian signals.* JoCICI17 (2). Cartago, Costa Rica. 2017. `https://www.academia.edu/39100068/Reconocimiento_automatico_de_se%C3%B1ales_accesibles_de_semaforo_en_dispositivos_m%C3%B3viles`
- Author. *Detección de voces y otros ruidos en ambientes de trabajo y estudio.* JoCICI15 (1): 68-71. CITIC-PCI. San José, CR. 2015. `https://www.academia.edu/39038694/Detecci%C3%B3n_de_voces_y_otros_ruidos_en_ambientes_de_trabajo_y_estudio`
- Author. *Automatic pitch recognition in a computer game interface.* Ingeniería 25 (1): 13-33, ISSN: 2215-2652; 2015. San José, CR. 2015. `https://doi.org/10.15517/ri.v25i1.11751`.