JUAN M. FONSECA-SOLÍS

Personal webpage: juanfonsecasolis.github.io

Email: juanma2268@gmail.com - Costa Rica, a land with no army since 1948.

On weekdays: Bs. in computer science specialized in software quality control and assurance with experience in functional and non-functional testing for mobile devices and web applications at full-agile environments. Elaboration of test plans, estimation, automation, and execution of test cases (smoke, regression, sanity), and quality metrics.

On weekends: M. Sc. in electronics with an emphasis in digital signal processing, able to develop algorithm for pitch recognition, frequency analysis, denoising, compression, filtering, interpolation, sensor fusion, and feature extraction.

Academic interests: mathematical signal processing, audio processing and acoustics, subjective audio quality assesment (QoE), pattern recognition, IoT, and wearables.

EXPERIENCE

Avantica Technologies (now an Indecomm company)   06/18 – 02/21 — San José, CR
Software quality assurance engineer II

· Performed manual testing for two clients, one dedicated to personal credit management and the other to photo personalization services. Technologies: Optimizely, Kibana, Mixpanel, JBoss, MySql, Charles Proxy, Jenkins, Zeplin, Miro, Graphene, Postman, cUrl, TestRails, and Photoshop.
· Wrote an internal training for testing web services (Rest and Soap) using state-of-the-art tools. Technologies: SoapUI, Postman, RestAssured, cURL, and Swagger.
· Provided insights for audio and video quality metrics (PESQ, among others).

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

· Tested and improved an audio signal processing algorithm for recognizing rich-harmonic pitch contours in highly polluted environments (the sound of accessible pedestrian signals).
· Implemented the solution in a mobile application (`https://play.google.com/store/apps/details?id=ucr.citic.rasp`) and publicated the results in two scientic journals. Technologies: Android SDK, Octave/Matlab, MusicG, Android-plot, and LaTeX.

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 and took care of the CD/CI pipeline. Developed an internal application for sanitizing beacons that saved hours of frustration to the team. Technologies: Selenium WebDriver on C#, Charles Proxy, Splunk, GO pipeline, Sortsite, and Burp.

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 applications for banking. Technologies: Soap APIs, C#, Visual Basic.

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.
Not already mentioned tools	Linux (vim, autotools, valgrind, GBD, QEMU), Git, OpenCV, Pandas, Jupyter notebook.
Libraries	Numpy, Scipy, Matplotlib, 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.

LANGUAGE

English	TOEIC (B2 on 2014).
Spanish	native speaker.

RELEVANT COURSES

CS	**EE**
Operating systems	Digital signal and image processing
Artificial intelligence	Software Verification
Software engineering I & II	Embedded systems
Computer networks	Computer vision
Databases I & II	FPGA prototyping
Computer architecture	Sound processing
Compilers and automatas	Functional analysis and LO theory
Probability and statistics	Pattern recognition
Calculus I-III	Adaptive signal processing
Operations research	Intellectual Property
Linear algebra	Systems and models

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.

AWARDS

- Avantica Technologies. *Chosen idea of Innovathon 2015*. Designed math and circuitry for a data acquisition system that used a sonometer and a ESP8266 for logging the levels of acoustic intensity in open-plan offices during videoconference time.

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`.