Sergio Andrés Valverde Vega

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Embedded software engineer at Hewlett Packard Enterprise, former electrical and electronic engineering lecturer at Universidad de Costa Rica and undergraduate mechanical engineering student. Passionate about science and technology, with strong technical and interpersonal skills for working in teams and completing projects. Experience working with embedded Linux, microcontrollers and programming ASICs.

Previous Employment

- **Hewlett Packard Enterprise** — **Heredia, Costa Rica**
  Embedded software engineer — *December 2015–Ongoing*
  Embedded software engineer at Hewlett Packard Enterprise, working primarily in a SDK that interfaces a networking ASIC registers with high-level software, in coding Linux device drivers for PCIe devices and in developing firmware for an ARM-based networking line card. The main duties also involve writing unit tests for both the SDK software and the Linux device drivers.

- **Universidad de Costa Rica** — **San José, Costa Rica**
  Lecturer — *January 2015–December 2015*
  Lecturer at Universidad de Costa Rica on topics regarding Linear Circuits, Signals and Systems, C Programming and Analog Electronics. The main objective of each class is to familiarize the students with different circuit and system analysis techniques while exercising their problem-solving abilities with various assignments. I was also a member of "ElectrizArte", a socially-driven project aimed to showcase engineering through artistic creations. Other duties are related to organizing and helping with different events, such as vocational events.

- **Intel Costa Rica** — **Heredia, Costa Rica**
  Student Worker – Research, Development and Innovation (RDI) Department — *2013–2014*
  Applied Research Student Worker at Intel Costa Rica. The RDI team consisted of 5 final-year electrical engineering and computer science students working to establish ideas and projects that would help improve the manufacturing endeavours of the site. I participated in three main projects during this internship: Simulation of the movement of a robotic arm in the manufacturing floor, exploration of the Intel Galileo microcontroller board and development of an embedded system capable of tracking vehicles with GPS modules and reporting their position to a remote server.

- **Pattern Recognition and Intelligent Systems Laboratory (PRIS-Lab)** — **San José, Costa Rica**
  Undergraduate Research Assistant — *2013–2014*
  Team leader for the initial exploration and documentation of Motion Capture technology in the PRIS-Lab of Universidad de Costa Rica. An OptiTrak Motion Capture system was successfully operated to control NAO robots. This development was the ground work for future applications in the laboratory, such as sport movement analysis and scoliosis treatment.

- **Non-Linear Photonic Research (NLPR-Lab)** — **San José, Costa Rica**
  Undergraduate Research Assistant — *2012–2013*
  Exploration of different microcontrollers and development boards for stepper motors control and Wi-Fi applications, with special emphasis in STM32 Discovery boards and Spark Core boards.

Education

Academic Qualifications

- **Universidad de Costa Rica** — **San José, Costa Rica**
  Bachelor , Electrical Engineering — *2011–2014*
- **Universidad de Costa Rica (Ongoing)** — **San José, Costa Rica**
  Bachelor , Mechanical Engineering — *2009–2016*
- **María Inmaculada High School** — **San José, Costa Rica**
  Diploma , High School — *2004–2008*

Notable Projects

- **Personal Project (Ongoing):** *'Development of a Sensor Network for Accurate Object Placement'*

  I am currently developing a sensor network that will be able to accurately locate and measure where an object is placed. This project requires high technical ability and research in terms of positioning algorithms, microcontrollers and appropriate communication protocols.
- **Bachelor Graduation Project:** *'Vehicular monitoring with GPS/GPRS modules and Intel Galileo'*

  The goal was to feed a server with the necessary position and time data of an embedded system inside a moving vehicle. The system was able to position vehicles with a 10 meter accuracy and report the status to the remote server. This project won the second place in the Intel Costa Rica Makersthon held in 2014.

Technical and Personal Skills

- **Programming Languages:** Proficient in Bash, C, C++, Matlab, Python, TeX. Basic ability with Verilog.
- **Industry Software Skills:** AutoCAD (Intermediate), Matlab (Advanced), OrCAD (Intermediate), SolidWorks (Intermediate), TINA (Advanced). Advanced use of GNU/Linux, Microsoft Windows and Macintosh.
- **General Skills:** Good communication, oral presentation and team work skills.
- **Languages:** Spanish (first language), English (fluent, TOEFL: 109).
- **Other:** Drivers License up to date. Can write well organized and structured reports. Good soldering skills.

Interests and extra-curricular activity

- Volunteer for Raleigh International and TECHO, regarding environmental and social causes (2010 to date)
- Professional interests oriented towards embedded systems, robotics and biomedical applications.
- I'm also interested in sports, digital photography, music (I'm a self-taught guitar player) and traveling.

References

- Lucky Lochi Yu Lo, Ph.D. – lochiyu@eie.ucr.ac.cr
- Teodoro Willink Castro, M.Sc. – twillink@eie.ucr.ac.cr