





















Productividad1.pdf

- Hillier, F. S. (2012). *Introduction to operations research*. Tata McGraw-Hill Education.
- Hoger, M., & Angel, C. (2010). EJEMPLO ESPECIFICACIÓN DE REQUISITOS SOFTWARE.
- LA NACION. (2017). Cuál era el sueldo promedio de un programador en la Argentina en agosto - LA NACION. Retrieved May 15, 2018, from <https://www.lanacion.com.ar/2066253-cual-era-el-sueldo-promedio-de-un-programador-en-la-argentina-en-agosto>
- Ministerio del trabajo. (2018). Ministerio del Trabajo – Ecuador. Retrieved May 15, 2018, from <http://www.trabajo.gob.ec/>
- O'Regan, G. (2015). Software Engineering Institute (SEI). In *Pillars of Computing* (pp. 195–205). Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-319-21464-1\\_30](https://doi.org/10.1007/978-3-319-21464-1_30)
- Remón, C. A., & Thomas, P. J. (2010). Análisis de Estimación de Esfuerzo aplicando Puntos de Caso de Uso.
- Rodríguez, C. (2002). Identificación y adecuación de indicadores de gestión para un sistema de la calidad basado en lineamientos iso 9000: 00. Universidad Católica Andrés Bello. Retrieved from <http://biblioteca2.ucab.edu.ve/anexos/biblioteca/marc/texto/AAQ2674.pdf>
- Rosenberg, J. (1997). Some Misconceptions About Lines of Code. *Proceedings Fourth International Software Metrics Symposium*, 137–142. <https://doi.org/10.1109/METRIC.1997.637174>
- Sommerville, I., & Alfonso Galipienso, M. I. (2005). *Ingeniería del software*. Pearson Addison-Wesley.

## Biographies

**Israel D. Herrera Granda** is an Investigator Professor of the Industrial Engineering Career, at the Universidad Técnica del Norte, Ibarra, Ecuador. Holds a Automotive Engineering degree and a Master in operations and logistics (MOL) degree from Escuela Superior Politécnica del Litoral. He has published conference papers and chapters of regional books. Has participated in numerous projects and completed research in several areas. Specialist in Operational Research, Logistics, and Transport research.

**Jorge A. Castro Querembás** is a student of the Computational Systems Engineering Degree at the Universidad Técnica del Norte, Ibarra, Ecuador. He has technical training in computer programming JAVA technology and is a junior programmer prospect. He also has training related to computer networks, databases and free software. He has been a collaborator in several research projects and will specialize his career in information technologies in server's administration.

**Christopher S. Estrella Grijalva** is a Student of the Computer Systems Degree at the Universidad Técnica del Norte, Ibarra, Ecuador. He has experience in the development of web applications specializing in Front-end, also has expertise in the management of GIT technology and has participated in several local web developments in his city and has collaborated in research projects.

**Marcelo R. Alvarez Quishpe** is an engineering student in Computational Systems at Universidad Técnica del Norte, Ibarra, Ecuador. He is passionate about computer science since he was a child, he hopes to specialize in computer security, he has collaborated, and he is a member of Ethical Hacking UTN club, and lead to the investigation of metadata and macros.

**Leandro L. Lorente Leyva** is an Investigator Professor of the Industrial Engineering Career, at the Universidad Técnica del Norte, Ibarra, Ecuador. Holds a Mechanical Engineering degree and a Master of Computer Aided Design and Manufacturing (CAD/CAM) degree from Universidad de Holguín, in Cuba. He has published journal and conference papers. Has participated in numerous projects and completed research in several areas. Specialist in computer-assisted design, planning and manufacturing.

**Carlos A. Machado Orges** is Industrial Engineer and Master an Industrial Engineering. Computer Science Specialist and Assistant Professor of the Department of Industrial Engineering, Universidad de Holguín, Cuba. Investigator Professor of the Industrial Engineering Career, at the Universidad Técnica del Norte, Ibarra, Ecuador.