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# Education

## Computer Science

## Universidad de Alcalá de Henares

**Coursework**:Data Structures, Operative Systems, Data Bases, Memory Shared Concurrent programming, Cloud Computing, GPU Programming, Robotics, Functional Programming, Software Engineering, Distributed Programming, Network Management, Artificial Intelligence, Compilers, Object Oriented Programming, Logical Programming,Statistics, Linear Algebra, Calculus, Logic, Algorithmic.

## British Council

TOEFL 110-114 Cambridge CAE C1.2 English level.

# Publications

* Juan Casado, José Luis González, Abdelhamid Tayebi, Josefa Gómez, Francisco Sáez de Adana (2019) **Application of bioinspired algorithms for the optimization of a radio-propagation system simulator based on OpenStreetMap**
* Josefa Gómez, Luis Fernández, Ana Castillo, Juan Casado, Abdelhamid Tayebi (2019) **Development of Competence Maps for Training Programs Based on the European Frameworks e-CF and ESCO**

# Investigation

## Optimization of antenna placement using genetic algorithms

## Universidad de Alcalá de Henares

Set of genetic algorithms to determine the best placement of antennas to reduce signal loss over a given area.

Web application to get user input and displays the calculated antenna loss over a map.

Python server-side program that uses SRTM height data to calculate data loss of an antenna using heuristic techniques.

DevOps with docker to allow the hole system to run cross platform and be deployed on the cloud.

# List of publications where we would expect to see reviews on the book topic.

There are numerous of IEEE articles about antenna loss and genetic algorithms as a way of making optimizations on antenna placement, some of the magazines where those articles have been found are:

* IEEE Antennas and Wireless Propagation Letters.
* IEEE Antennas and Propagation Magazine.
* IEEE Transactions on Antennas and Propagation.
* IEEE/ACM Transactions on Computational Biology and Bioinformatics.

Something similar happens with other publishers like El Sevier or ACM which also covers those same affairs.

Nevertheless, the research covers a few more topics that could also bring reviews to the book like getting spatial height data or advantages of developing platform agnostic software through containers. Specially related with spatial data there are many active publishers that could make reviews of the book like:

International society of photometry and remote sensing: <https://www.isprs.org/publications/Default.aspx>

International journal of geo information: <http://www.mdpi.com/journal/ijgi>

SRTM data provider’s blog: <https://cgiarcsi.community/category/blog/>

# Technical experience

* Multi-threaded memory shared remote monitoring software in JAVA.
* JAVA program that translates JSON to .dot and .svg files using antlr4 and graphviz.
* Artificial vision and image recognition with Arduino and PixyCam.
* Set of common algorithms implemented in Swift (greedy/simple recursion/backtracking/dynamic).
* Imitation of the 2048 game using CUDA with the aim of an efficient execution over a GPU.
* Imitation of the 2048 game using SCALA with the aim of learning functional programming paradigm.
* Creation and maintenance of a relational SQL data base as a university project.
* Color Queue: iOS and Android app, on-line game in C++.
* Game of life: iOS and Android app, Conway’s Game of Life simulation.
* Shutter Earth: 2d platform shooter in JAVA over slik2d game engine.
* Linux shell that used POSIX calls to the OS and implemented a custom pipe and redirection system.

# Programming Languages and Technologies

* C++, C, JAVA, Python, JavaScript, CUDA, Swift, R, Scala, Lisp, Prolog, SQL, HTML5, CSS3, XML, JSON, Markdown, LaTeX.
* ROS, MATLAB, cocos2d-x, pygame, slick2d, Swing, antlr4, OpenCV, TensorFlow, graphviz.
* PostgreSQL, MySQL, MongoDB, Docker, Kubernetes, Git, WireShark, Linux, JIRA, Project.
* NetBeans, XCode, CLion, PyCharm, Sublime Text, Visual Code, Android Studio, KiCad.