

Dear Students,

If you are looking for a thesis topic and interested in coding I welcome you for the below research area.

Please contact me in person, should you have the required qualifications.

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**Computer Engineering**  
**Office: Z16**

1. Title of thesis (subject to change of course) : Efficient Algorithms for Data Collection and Routing in Wireless Sensor Networks.
2. Prerequisites: Interested in problem solving, Good at C / C++, Java or MATLAB, knowledge of Algorithms, Data Structures and Simulation/modelling, Fluent in Written English, (Knowledge of Genetic Algorithm is desired)
3. A short description of the problem (a short paragraph)

Wireless sensor networks are composed of sensor nodes which are capable of communicating with each other and with the static sink via wireless communication. One of the problem is to collect the data stored in these sensor nodes by using mobile sinks. Mobile sinks visits these sensor nodes to collect the data stored by them. As the time required by the mobile sink tour is longer than that of the speed of radio transmission, we have many different problems. To mitigate these problems we have to design efficient and effective mobile sink routes and intelligent approaches to collect data. We mostly use meta-heuristics such as Genetic Algorithms or Ant Colony Optimization. We have to develop our code to simulate the WSN and the proposed algorithm.

The interested candidates can take a look at published papers on my web page: <http://www.atilim.edu.tr/~kmkarakaya/pub.html>