

THE HEALTH ADVISOR

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Cost of treatment for chronic diseases continues to escalate; empowerment of the patient in the delivery of such treatment may help contain the cost. Our 'Health Advisor' helps the patient to find: (1) specifics of his or her illness, (2) possible treatments, (3) location of health providers offering these treatments, (4) cost of the service, and (5) possible risks and benefits. It will also monitor their progress as treatment advances. It is a Multi-Agent System (MAS) that intelligently searches for such information on the Web and presents the results to the patient. We have used Wooldridge's Gaia methodology for the analysis and design phases of the project. We used Parkinson's disease as our test case. After thorough research on the disease, we determined the 'Environment' as comprising of diagnostic information, the patient's personal information and medical history, and information on possible treatments and health care providers, as available in multiple web databases. We added, in deference to the disease's uniqueness, 'symptoms' as an additional environmental parameter. This includes motor and non-motor features, and the health related quality of life (HRQOL) rating scales such as PDQ-39, PDQ-8, PDQUALIF, PDQL, and PIMS. The 'Role's Model' was obtained from the entities that play a role (for e.g., the patient and the software agents) and are involved in providing/acquiring relevant information. The 'Interactions Model' was obtained from the analysis of the relationships of all entities and the message interchange among them. The 'Organizational Structure' was determined from the analysis of the Role's Model and the Interactions Model. The 'Agent Model' constitutes the set of operations that each software agent is to perform. The last step as prescribed by the Gaia methodology is the 'Services Model' which is comprised of the set of operations of those entities in the system that are not software agents. We will present in the paper our detailed Gaia model for Parkinson's disease.