

This is an informal list and description of some of the term project topics done in previous years in this course; it may be useful in brainstorming if you are stuck for an idea. (We've made no attempt to prune the list, so some topics may show up multiple times.)

It is perfectly ok if what you're thinking of shows up on this list. You do not have to do something different from what's been done in the past.

TAXAID - A program helping fill a 1040 long form and all subforms.

Sailor - a program for tactical advice in competition sailing for two sail boats, such as Americas Cup.

Tree diagnosis - a program for diagnosis and treatment of trees around houses in New England, for infestation of common bugs and their treatments.

Fish Diagnosis: Diagnosis and treatment of illness of pet fish (in your living room).

A Knowledge-based Topology theorem Prover: A backward chaining program that used its knowledge of topology to answer questions about topology and give simple proofs based on its knowledge. The interesting demonstration was that the time taken and the length of proof depended on the amount of knowledge.

Selecting appropriate function to model multiattribute Utilities: A knowledge based program that helped select an appropriate utility structure to model a user's utility function by asking a lot of questions. Basically asked about the various assumptions that can and cannot be made and then determined which forms for describing utility function (e.g., linear combination) and recommending the simplest of them.

Legal assistant: Several variants:

- a) determining whether you had a legal grounds to bring a trespass charges
- b) determining assault and battery charges.
- c) determining civil liberty infringements.

An Energy Expert: energy consultant for energy management of building complexes.

Funchard- An Expert system for translating functional descriptions to hardware descriptions. Takes a description of function in a functional language (MADD) and generates a register transfer level hardware description.

A mycin-based Purchasing Agent: Given a customer's order, ships products from inventory and bills the customer, or if the order cannot be filled, backorders the item(s), choosing an appropriate vendor based on the customer's standing (and importance to company)

The tennis instructor - given the description of the problem in tennis (i.e., the ball constantly goes left of where it was aimed), recommends changes in the stance and grip to correct the problem.

Computer Based Legal Consultant for civil law assault and battery: uses semantic knowledge of world and analogies in coming up with precedents.

Dinner Menu Planner: Prepares a multi-course banquet menu preparation, based on the nature of the event, the season (what is available) and budget.

Psychiatric Outreach Expert -- evaluate referrals to determine if the applicant needs the services of the "day care center for psychiatrically impaired elderly", evaluate the patients to determine if they are still appropriate for the services rendered by the center.

Digex - an expert in digital circuit design

Expert system for Icon Design

Knowledge based expert on tropical aquarium fish

Reasoning about LPC speech analysis

An expert system for digital test generator

A knowledge based scenario analysis tool -- for analysing time-varying behavior of a large-scale economic model.

Bass - a stereo sales expert system

Milage: a running injury diagnosis expert

Program for bidding in contract bridge.

An interpreter for Jackson vocational interest survey:

Dr. Spock: A childhood disease diagnosis (Spock in a box).

Choosing a grad school

Plant diagnosis with emphasis on user/system dialogue

Diagnosis of digital memory circuits

Graphics layout

Diagnosis of distributed acoustic sensor nets

Building system maintenance

Room layout

ES for differential equations

Code optimizer for 6502

Decision tree builder

Multiple utility assesment

Quantative/qualitative simulator for acid-base electrolyte

Poker Player

Bridge bidding

Child's toy gift selection

Satellite image interpretation

Inferential retrieval of medical images

Advice on which neighborhood in Wash. D.C. to live in [buy or rent]

Advice on which neighborhood in Boston-area to buy a home in.

Consultant on testing and repairing pinball machines

Advisor on helping people find new jobs after recovering from disabilities.

Advice on which sportswear gift to buy (depending on price, occasion, etc)

User modelling for assessing how well a user is asking for information in a real-time control environment; give tailored suggestions for improving question asking strategy.

Combining entity-relation diagrams

Configuration checking and troubleshooting of telecommunications security equipment

Woodworkers assistant, diagnosing problems when gluing, sanding, sawing, etc.

Beer recipe formalator

Graphic design consultant

Anatomical drawing assistant: how to draw hands

Sports Clinic Goal: Diagnosis of sports injury.

REBECA: A Rule-Based Class Advisor For Freshmen

Knowledge-Based Optimization Selectionn in a Quasistatic Computing Enviornment

PhotoTech Knowledge Based System: gathers info. to suggest the appropriate f-stop number, shutter speed, as well as the use of any other necessary and useful equipment.

SailMaster: Recommends specific sailboats for prospective buyer given; experince, level of interest, finances and other factors.

Extracting Information from Simple Text Messages

Party Planner: Creating an expert System for planning cocktail parties.

A Knowledge Representation for PC Configuration: Configure personal computers in the spirit of DEC's XCON.

An Expert System for Recommending an Appropriate Beer to Accompany a Specific Meal

A Boston Restaurant Picker

Yet another Fish Finder: Helps marine aquarists selct inhabitants for their tanks.

CAS: Choose a Sport

Building a Domain Expert for an Intelligent Tutoring System

Model-Based Troubleshooting of Large Power Transformers

An Expert Living Group Chooser: Choosing An Entry Within MacGregor.

TONTO: An Expert System For The Game Netrek

A Childhood Immunization Advisor

Dorm Advisor: A Knowledge-Based System to Advise Freshmen on Where to Live.

A Blackboard System for Automatic Transcription of Simple Polyphonic Music.

Pump Selection

An Expert System For Personal Financial Management

A Data Structure Consultant

The Strategic Advisor: An Expert System For Business Portfolio Investment Strategy

A DataBase Design Assistant

COBRA: Concrete Bridge Advisor. A System for Reinforced Concrete Bridge Design and Construction Configuration.

Manpower Allocation at the New York Public Library: A Case study implementing Expert Systems in the Public sector.

Project management and Planning Design: involves the planning of a basic construction project.

Taxplan: An Expert System for passing Through Tax Losses

Computer Programmed Accountant

A System for Selecting Personal Computer Printers

Boston Activity Advisor System

A Knowledge-Based Subtraction Tutor: Serve as an intelligent tutor in the diagnostic teaching of arithmetic, specifically subtraction.

Belief Networks for Predictive and Diagnostic Probabilistic Reasoning

A Write-Up on the DungeonMaster Expert System

A Knowledge Based System for the Automobile Fault Diagnosis

Tools for Model-Based Troubleshooting: exploiting structural and behavioral knowledge to locate failures

REAL: Real Estate Analyzer System.

Perennial Flower Border Design Aide: This system designs a perennial flower border, subject to as many as 8 constraints specified by the user.

Design and Implementation of A Knowledge based Personal Event Scheduler

RoTA: Road Trip Advisor: To aid in deciding what the most desirable route for a trip would be.

Phone Counselors: Aids suicide prevention.

Cardiovascular Pathology Diagnosis System

Trinidad and Tobago County Information Agent

Acquisition of a Useful List of Patient Constructs Concerning Healthiness

Extracting Information from Simple Text Message

Acquiring Control Knowledge for Symbolic integration

Sales Master

Musical Instrument

A Knowledge Based System to Hand Tame Parakeets

MUSIN: A knowledge- Based System for Choosing Musical Instruments

Sing Travel: Singapore Travel Advisor

The Spades Advisor

Expert Mahjong Player

A Hearts Passing Expert

Star 1.0- A Statistical Test Advisor

Expert Career Advisor (XCAD)

SmartClass

The Advisor Knowledge-Based System

Design and Implementation of the PC Upgrade Advisor Knowledge Based System

Compatilizer A rule- based System for Determining if He and She are Compatible

Matchmate

Frame- Based Word Sense Disambiguation

HIT: Hard-drive Installation Troubleshooter

An Anesthesia Expert System

Abstracter Expert System

Rule-Based system for Identifying Stop Consonants

Advisor: Choosing a Child's Nursery School

Restaurant Selector

3rd Base Coach

OMAAC: Object Modeling Advisor and Critic

Dormitory Selection with a Knowledge Based System

Counterpoint

Pet Selector

Magic: The Deckmaster

An Expert System to advise on the Choice of Sports Cars

ESP: Expert Sheepshead Player

Antioch: Spiritual Advice Expert

Royal East Expert System

Personalized E-Mail Filtering and Notification System

Mead

Wine Chooser

The Gambler

PISS: Personal Investment Strategy System

Asia Crossing: Choosing the city that's right for you

Snowboard Master

Counserlor-O-Matic

SmartHearts: A Knowledge-Based System

Woody the Virtual Bartender

NBA Bet Master

The Video Shoot Advisor: Expert System-Based Multi-Camera Videography Planning System

Monster.kb:Job Selection Made Easy

Out on the Town

The Gift Giving Guru

The Italy Planner

Meeks: Movie Entertainment Expert Knowledge System

Counselor Assistant – A Rule-Based System that Facilitates Boarding School Recommendations

Hong Kong Tour Expert

Modulo2

WEST:the Wine Expert System

Googol: a Web Page Classifier

IRON CHEF Receipt recommendation agent

A Rule-based house-hunting assistant

A Rule-Based System for Playing Capitalism

Auto-Choser

Film Finder: An Expert System Implemented with Porbabilistic Reasoning

An Expert Design Analyst for Object-Oriented Design

Which Car To Buy?

Smart Bearings

The Sleep Advisor

DRIVE: Determining the right Investment through Vehicle Expertise

Movienaut: A Video Recommendation System

The BeerWiz Knoledge-Based System

PASS: A Rule-Based Song Selector

Counselor Assistant – The Knowledge Based System Assists Counselors

A Monoploy Advice System

Tonal: A Knowldege-Based System for Determining Music Genres

Physics Wizard

CNACE: Cross Network Alarm Correlation Engine

The Smart Ski Chooser

The Aprtment Wizard

StatCrafty

NightMaker: the Evening Designer

Athena Consultant

Virtual Anne Hunter

Music Composer

Mine! A Mine Site Location and Analysis Expert System

SIX: A Knowledge Based System for Selecting A Computer-Science Related Major