Rajshekhar Sunderraman

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Education

Ph.D. 1988, Computer Science, Iowa State University, Ames, Iowa
M.Tech. 1982, Computer Technology, Indian Institute of Technology, Delhi, India
B.E. (Honors) 1980, Electronics Engineering, Birla Institute of Technology and Science, Pilani, India. BITS Alumni Page in US

Research Interests

My research interests are in the theory and practice of Databases, Logic Programming, and the Semantic Web. To find out more about my research interests, please see Michael Ley's DBLP Bibliography Server and the departmental faculty profile. I have authored Oracle 10g Programming: A Primer (Addison Wesley, 2008) (available at amazon.com) and Lab Manual for Elmasri-Navathe Database Textbook (Addison-Wesley, 2010) .

Spring 2021 Teaching

CSc 8711 Databases and the Web
Past Teaching

Graduate Program Links

Alum Information and Forms
Departmental Web Site
College Web Site
Graduate Advice (Courtesy Professor Honavar)

CSc 8711, Databases and the Web (Spring 2021)

Class time: 12.30 PM to 3.55 PM, Friday (Online - Mostly Synchronous)

Instructional Staff

Instructor: Raj Sunderraman; Email: raj@gsu.edu; Office hours: Monday 3.00 pm to 5:00 pm
TA: Mr. Hai Le; Email: hle49@student.gsu.edu; Office Hours: Wednesday 3.00 pm to 5.00 pm

Course Details

Syllabus
Course Discussion on Piazza (Self sign-in)
Homework Submission Guidelines
Class Lecture Recordings

Course Materials

IV. Semantic Web

Slides/Notes:
Semantic Web Chapter from Textbook
Python API for RDF Example
SPARQL Tutorial
SPARQL Examples

Readings
Scientific American Article
Ontology Tutorial
Metcalfe's Law, Web 2.0 and Semantic Web

Software
Apache Jena Project
Protege (RDF/OWL Editor...)
Python API for RDF (rdflib 5.0.0)

Project 5 (Due: April 20, 2021 - Tuesday) (Handin under assignment 5)

III. JSON

Slides/Notes/Code:
JSON Parsing in Python
JSON Schema (derived from Understanding JSON Schema), Linked List: Instance, Schema
JSONiq Part I, JSONiq Part II (derived from JSONiq Book), JSONiq Query Examples
MongoDB, Python access to MongoDB (pymongo), Classroom App using MongoDB

Software:
Python package for JSON Schema Validation
rumbledb.org (powered by Apache Spark)
MongoDB Community Server, PyMongo

Useful Links:
Online JSON Validator
https://www.jsoniq.org/
MongoDB Documentation
PyMongo Tutorial

Project 3 (Due: March 21, 2021 - Sunday) (Handin under assignment 3) P3 Rubric
Project 4 (Due: April 4, 2021 - Sunday) (Handin under assignment 4) Solutions

II. XML

Slides:

XML Basics, DTD, XML Schema, XPath, XQuery, XSL, XSL-with-parameters

Software:
BaseX, libxml2, Python lxml, EditX Community Edition

Useful Links:
XPath and XQuery Functions and Operators, XQuery FunctX Library, Lab Manual XML Chapter

Project 2 (Due: February 28, 2021 - Sunday) (Handin under assignment 2) P2 Rubric and Solutions

I. Modern Web Application Development (GraphQL/REST Web Services, HTML5/Javascript/Ajax, MySQL)

Modern Web Application Development using APIs (REST vs GraphQL)
swagger.io (OpenAPI)
Python Flask Tutorial
GraphQL in Python
MySQL Tutorial, Another MySQL Tutorial
Python-MySQL Connector
GSU Classroom Search Using REST API, Using GraphQL
Project 1 (Due: January 31, 2021 - Sunday) (Handin under assignment 1) P1 Rubric

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Past Courses

- CSc 8910, Seminar.
  Fall 2020, Fall 2019, Fall 2018
- CSc 8711, Databases and the Web.
  Spring 2019, Spring 2015, Spring 2013, Spring 2011, Spring 2009, Fall 2006, Spring 2005, Spring 2004, Fall 2001, Summer 2000, Summer 1998
- CSc 8710, Deductive Databases and Logic Programming.
  Fall 2016, Fall 2012, Fall 2010, Fall 2008, Spring 2007, Fall 2005, Fall 2003, Fall 2002, Fall 2000, Fall 1999, Fall 1998
- CSc 7003, Programming for Data Science (Python)
  Summer 2020, Summer 2019
- CSc 4998, Web Programming.
  Spring 2006
- CSc 481/681, Automata.
  Winter 1998
- CSc 4710/6710, Database Systems.
  Fall 2011, Spring 2008, Spring 2003, Spring 2002, Spring 2001, Spring 2000, Spring 1999, Spring 1998
- CSc 4340/6340, Introduction to Compilers.
  Spring 2012, Fall 2009, Fall 2004
- CSc 4330/6330, Programming Language Concepts.
  Summer 2020, Spring 2020, Spring 2018
- CSc 3320, System-Level Programming.
  Fall 2000, Fall 1999, Summer 1999
- CSc 3210, Computer Organization and Programming.
  Fall 1999, Fall 1998, Spring 1998, Fall 1997
- CSc 2510, Theoretical Foundations of Computer Science.
  Fall 2007
- CSc 2310, Principles of Computer Programming I (Java).
  Spring 1999
- CSc 2010, Introduction to Computer Science.
  Fall 2013, Spring 2010 (using Robots)
- CSc 1302, Principles of Computer Science II (Honors section)
  Fall 2016
- Honors 1000, Productive Data Manipulation in Python and SQL.
  Fall 2020, Fall 2019, Fall 2018

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Updated Information on the Graduate Program
Computer Science Department
Georgia State University

Alumni

- Ph.D. Graduates (LinkedIn version)
- M.S. Graduates

Forms

- M.S. (Project) Plan of Study Form (pdf file)
- Ph.D. Plan of Study Form (pdf file)
  Old Ph.D. Plan of Study Form (pdf file)
- Transfer of Credit Form

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