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CSC-591: Foundations of Data Science
T/Th. 12:50-2:05pm. EBI-1005.

Ranga Raju Vatsavai

Chancellors Faculty Excellence Associate Professor in Geospatial Analytics
Department of Computer Science, North Carolina State University (NCSU)
Associate Director, Center for Geospatial Analytics, NCSU
&
Joint Faculty, Oak Ridge National Laboratory (ORNL)

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Introductions -- myself

- Academics
  - MS and PhD in Computer Science from University of Minnesota
- Experience (25 Years)
  - NFDMC, CDAC, IBM-Research: India
  - AT&T Labs, UMN, ORNL, and NCSU: USA
- How to address me
  - Prof./Dr. Raju

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Research Focus – Data Sciences

- Specialization in spatial and temporal data
- Group: STAC (http://research.csc.ncsu.edu/stac)
- Looking for interested Ph.D. and M.S. (thesis)

Data Analytics
- statistical analysis
- data mining
- machine learning

Data Management
- (O)RDBMS
- NoSQL

DS

High Performance Computing
- Shared and distributed memory
- Multi-core and many-core

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Student Introductions

- Your name, degree, and year

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Syllabus and Course Logistics

- TA/Grader
  - Patrick O'Connell (TA)
  - Grader (will be appointed soon)
- TA Office Hours
  - Tuesday: 11.15-12.30pm
  - Thursday: 3.45-5.00pm
- Instructor Office Hours
  - General availability: T/Th. 11.00-12.00pm
  - By appointment (rrvatsav@ncsu.edu), add "CSC-591" to subject.

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Syllabus and Course Logistics

- Text
  - Gareth James, Daniela Witten, Trevor Hastie and Robert Tibshirani. "An Introduction to Statistical Learning with Applications in R" (Free book, with slides, R-code and data)
- Optional
  - Richard A. Berk. "Statistical Learning from a Regression Perspective." Springer.
  - Foster Provost and Tom Fawcett. "Data Science for Business." O'REILLY

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- Additional Resources
  - Official introduction to R:
    http://cran.r-project.org/doc/manuals/R-intro.html
  - simpleR by John Verzani:
    http://cran.r-project.org/doc/contrib/Verzani-SimpleR.pdf
- More will be posted as needed …

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Syllabus and Course Logistics

- Online course management (moodle)
  - https://moodle1516-courses.wolfware.ncsu.edu/course/view.php?id=3204
- Lecture notes
  - Before the end of each week
- HWs – Moodle submission (by 23.55pm on due date)
  - One day late: -25%
  - After one day: -100%

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Syllabus and Course Logistics

- HWs/Exams
  - 5 Homeworks (5 x 5) = 25%
  - 2 mid-terms: 2 x 20 = 40%
  - 1 final exam: 30% (Comprehensive, but 50% coverage of topics after 2nd mid-term)
  - Class participation: 5% (includes one or two surprise quizzes).
  - Each h/w contains one programming "R" mini-project

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- Exam/Grading Rules:
  - No extensions (unless medical emergency and other excuses allowed by university policies)
  - All exams are in class, no other electronic devises except non-programmable calculator
  - All exams are closed book, but open notes (double sided single page).
  - Final is comprehensive (50% coverage from after 2nd mid-term)

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- Grading Scale (CT: Course Total = 100%)
  - $98 \leq CT$ - A+
  - $92 \leq CT < 98$ - A
  - $90 \leq CT < 92$ - A-

  - $88 \leq CT < 90$ - B+
  - $82 \leq CT < 88$ - B
  - $80 \leq CT < 82$ - B-

  - $78 \leq CT < 80$ - C+
  - $72 \leq CT < 78$ - C
  - $70 \leq CT < 72$ - C-

  - $68 \leq CT < 70$ - D+
  - $62 \leq CT < 68$ - D
  - $60 \leq CT < 62$ - D-

  - $CT < 60$ - F

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Syllabus and Course Logistics

- Regrading polices
  - Final will not be regraded.
  - For all other grading work: before you ask for regrading, you have to submit a written response (to TA/grader and copy to instructor) clearly stating why your answer is more correct and deserves better grade. Please note, entire question will regraded and you may risk lower grade.
  - If you are comparing your answer/grade with your friend, then both will be regraded again (with risk of lower grade).
  - All requests for regrading should be made within one week of grading, no exceptions will be made after that.
  - All arithmetic errors will be corrected (without regrading penalties).

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