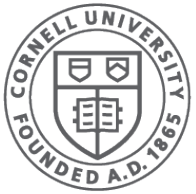
Administrivia

CS 4410: Operating Systems
Fall 2020
Professor Robbert van Renesse



Cornell CIS
COMPUTING AND INFORMATION SCIENCE

[R. Agarwal, L. Alvisi, A. Bracy, M. George,
F. B. Schneider, E. Sirer, R. Van Renesse]

Inclusion

- We strive to make CS4410 a welcoming, safe, equitable, and respectful environment, consistent with Cornell's commitments
- We recognize that the society we live in is none of those things, that we have implicit biases, and that we have to work hard every day to counter those biases to create an inclusive environment
- If you witness a bias incident or have been the victim of one, please file a confidential report with Cornell
- If you have any suggestions such as improvements to the web site, syllabi, slides, homework and exam questions, and so on, you can email cs4410-prof@cornell.edu or you can anonymously fill out a suggestion form

Emotional Help

Engineering Advising	www.engineering.cornell.edu/resources/advising	Academic advising for engineering students
Arts College Student	www.arts.cornell.edu/stu-adv/	Listing of general support services for a variety of concerns
Gannett	www.gannett.cornell.edu	Cornell University Health Service
CAPS	www.gannett.cornell.edu/services/counseling/caps	If you experience emotional distress, please contact Counseling and Psychological Services
Student Disability Services	sds.cornell.edu	Ensures that all aspects of student life are accessible, equitable, and inclusive of those with disabilities. Send accommodation letters to Veronica VanCleave-Seeley (vv48, Gates 401) by Sep 15.

Get help. Get documentation. The earlier the better.
Also, please look out for each other

How this class is organized

- Who's Who
- Before you take this class…
- Communication
  - Lectures, OHs, FAQ, etc.
  - Getting Help
- Homework, exams

About RVR

- Ph.D. C.S., Vrije Universiteit Amsterdam
  - Amoeba Distributed Operating System
- Industry: Research Scientist @ AT&T Bell Labs
  - Unix, Plan 9
- Serial entrepreneur
  - Reliable Network Solutions (IP → Amazon)
  - D.A.G. Labs (acquired by FAST, then by Microsoft)
  - Exotanium (ongoing)

Interests: scalable and fault tolerant distributed systems

Non-geek: musician (trad. jazz), swing dance, unicycling

Who are the TAs?

Abhimanyu Kompella
CS M.Eng.
he, him, his

Andy Zhu
CS B.Sc.
he, him, his

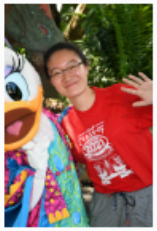
Carlos Alvarez
CS B.Sc.
he, him, his

Jack Ding
CS B.Sc.
he, him, his

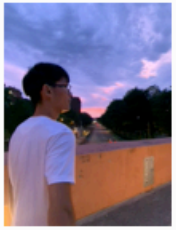
Jun-You Liu
CS Ph.D.
he, him, his

Luis Londono
CS B.Sc.
he, him, his

Michael Chin
CS B.Sc.
he, him, his



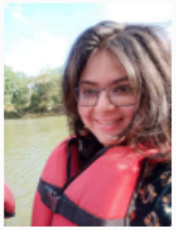
Minghao Li
CS B.Sc.
she, her, hers



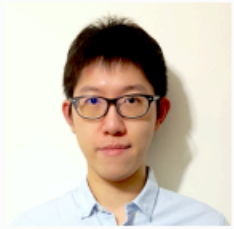
Mingzhao Liu
CS B.Sc.
he, him, his

Nikhil Saggi
CS B.Sc.
he, him, his

Tianxing Jiang
CS B.Sc.
he, him, his



Trishita Tiwari
CS Ph.D.
she, her, hers



Wen-DIng Li
CS Ph.D.
he, him, his

Yu-Ju Huang
CS Ph.D.
he, him, his

How this class is organized

- Who's Who
- Before you take this class…
- Communication
  - Lectures, OHs, FAQ, etc.
  - Getting Help
- Homework, exams

Prerequisites

- CS 3410, CS 3420 or equivalent required

Otherwise: *you must contact an instructor, explain your situation and request permission*

Course Content

Four Components

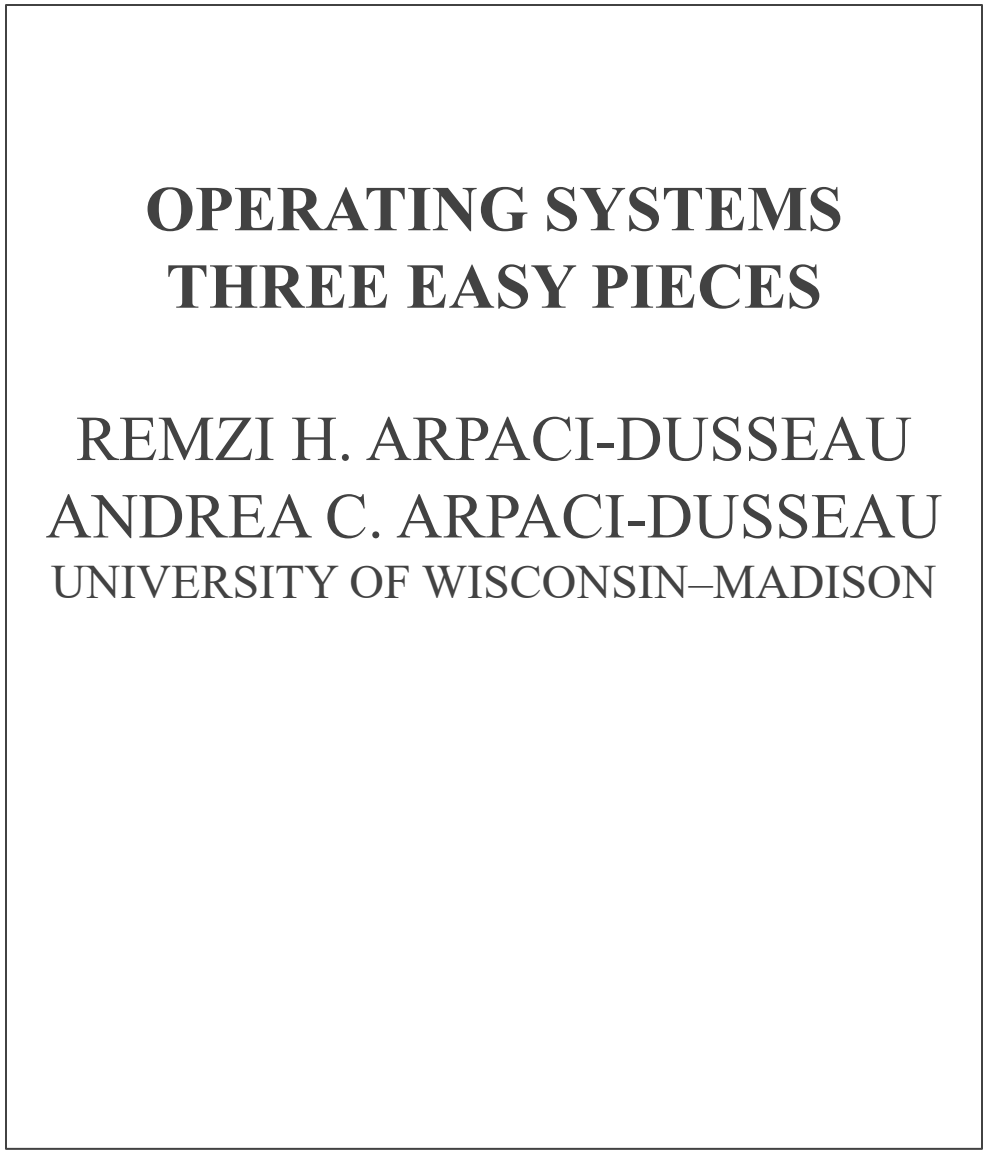
1. Lectures
2. Reading
3. Assignments
4. Exams

You are expected to keep up with all four

Draft Syllabus

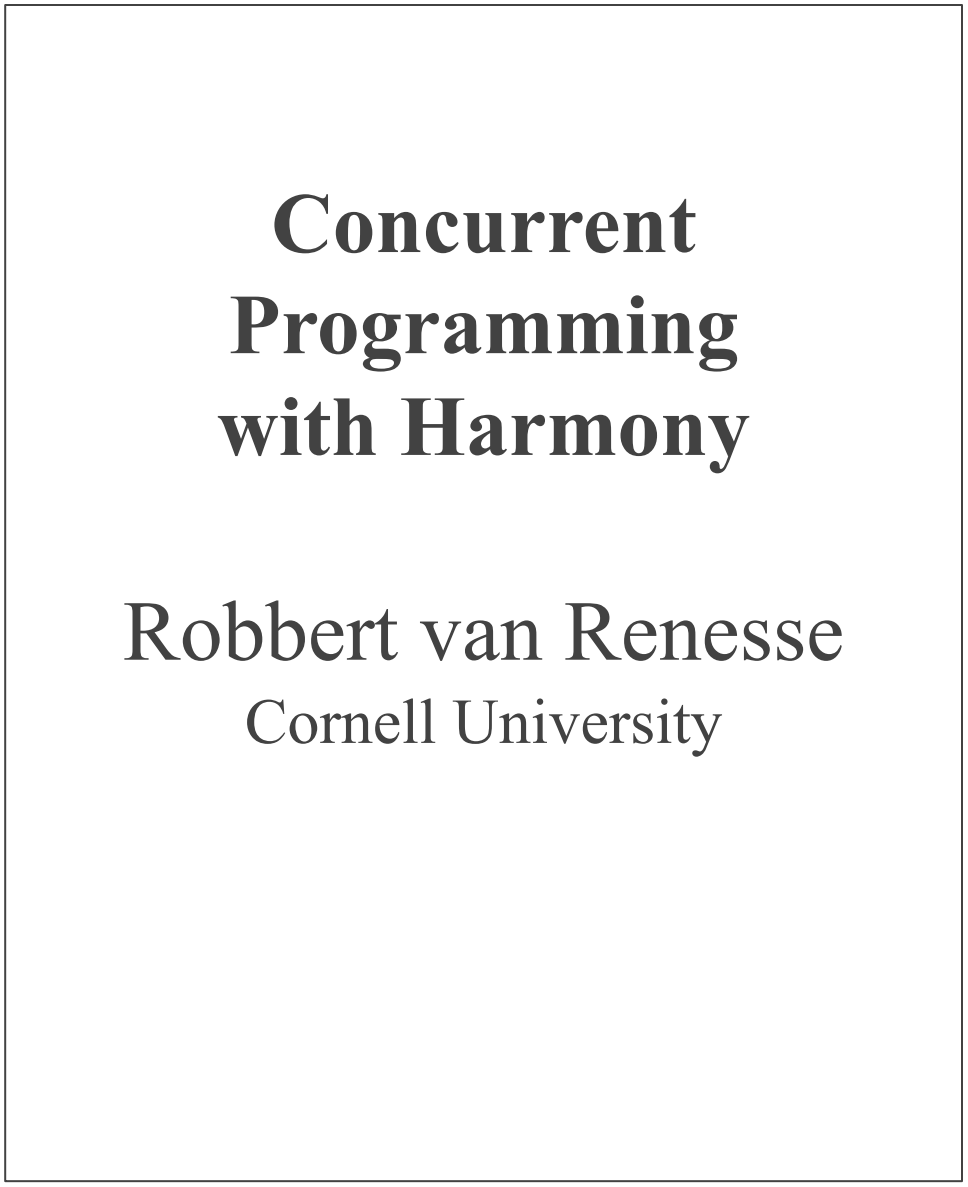
- Introduction
- Architectural Support for OSs
- Processes and Threads
- Synchronization
- Scheduling
- Memory Management
- File systems
- Networking
- Security

Required Textbook



- Free online
- Buy a PDF or a printed version

Also: RVR's new book



- Free online
- Linked from CS4410 web site
- A dollar offered for each new typo found
- 10 dollars for each new program bug found

How this class is organized

- Who's Who
- Before you take this class…
- Communication
  - Lectures, OHs, FAQ, etc.
  - Getting Help
- Homework, exams
- Grades & Policies

Communications

- Virtual → need for more communication
  - Web page
  - Lectures
  - Canvas
  - FAQ
  - Office Hours
  - Study Groups
  - CMS

Course Web Page

http://www.cs.cornell.edu/courses/cs4410/

- Schedule, exam & due dates
- Homework release and due dates
- Slides posted before each lecture

Let's have a look around at the web site

FAQ (Frequently Asked Questions)

- See sites.coecis.cornell.edu/cs4410faq/
  - Linked from course web page
  - You can post questions here and find answers at some later time

CMSX

https://cmsx.cs.cornell.edu

- Assignments
- Grades & Regrades

Lectures / Canvas

- Tues/Thurs 9:55-11:10pm, online, live
- All lectures recorded
  - *but live participation strongly encouraged*
- Posted on Canvas with captions

Office Hours

- Slots posted online
- There are **138** 20-minute slots each week
  - All days of the week, including evenings
- All OHs are over Zoom
  - Will consider special requests for in-person meetings
- You have to register for a slot
  - Please specify NetID and include topic
- Can only sign up for one slot at a time

Email

cs4410-staff@cornell.edu: time sensitive matters

- Goes to professors & TAs

cs4410-prof@cornell.edu: *sensitive* matters

- Goes to RVR only

Please no emails to personal email accounts

How this class is organized

- Who's Who
- Before you take this class…
- Communication
  - Lectures, OHs, FAQ, etc.
  - Getting Help
- Homework, exams
- Grades & Policies

Homework

- Assigned approx. once a week
- Individualized, fillable PDFs
  - (slight) randomization of problem parameters, multiple choice questions, etc.
  - Fully auto-graded (no TAs involved)
  - Regrade requests due within a week
- 2 slip days / assignment
- Max. 6 slip days total

Study Groups

- For each homework, students are organized in randomized study groups
  - Randomization takes into account time zones, performance, possibly more
- Each study group has a leader and an assigned TA
- Study groups are required to meet on-line (or in-person if all agree) at least twice
  - At least 45 minutes each
  - Once soon after release of homework
  - Once a few days before submission deadline
  - Provide “proof” by uploading a Zoom screenshot or photo
- Each student must still submit their own work
  - A student is fully responsible for their own submission

Study Group Code of Conduct

- Each student should feel safe, welcome, respected
- *Participate, but don't dominate*
- Be patient
- Respect diverse talents and ways of learning
- Fight your implicit biases

A well-run study group benefits all participants

Academic Integrity & Honor Code

All submitted work must be your own

- OK to discuss concepts with any other student
- Study group can submit the same code
- Different study groups are not allowed to share code

Violations will be prosecuted

Exams

- Randomized, fillable PDFs
  - Same as homework
  - Exam questions are versions of homework questions
  - Includes questions about lectures, homework, books
- Must be done individually
  - Open-book
  - Use Internet as “read-only” resource
- Cumulative
- Timed
  - two hours from download to submission
  - Can be done any time in 48-hour period
- 3% penalty for each 15 minutes late, up to 1 hour
- Fully auto-graded
- Regrade requests due within a week

Academic Integrity

Why not cheat?

- It hurts you in various ways:
  - It reduces the value of your Cornell degree
  - It stresses you out because you might get caught
  - You won't feel good about yourself afterward
  - The energy that goes into cheating is better used for learning
- It hurts other students:
  - It stresses them out
  - By far most students are honest

If you need help, get it early

Semester Grades

50% Assignments
50% Exams

- No "curving"
  - CS4410 is not a competition
  - Your grade reflects your learning objectives, not how well you did compared to others
  - Goal is to give everyone an A
- Weighing of individual homework assignments and exams TBD

Practicum: CS4411

- CS4410 assignments are “small”
- In CS4411, you’re going to have hands-on C development experience with an almost-real operating system: EGOS
  - Write a queue
  - Write a threading package
  - Write a scheduler
  - Write a file system cache
  - Write a file system
- Teams of two programmers

LOTS OF FUN!

CORNELL UNDERGRADUATE RESEARCH BOARD

PRESENTS

Grad School Demystified

Wednesday, Sept 16th at 7:30 PM

Interested in graduate school? Learn more about pursuing an advanced degree from a panel of current graduate students – including how to decide if graduate school is right for you, what the application process is like, and making the most of your graduate school experience!

To **register**, go to
tinyurl.com/GradSchoolDemystified

Got **Questions?** Contact Jennifer Guo at
jg999@cornell.edu!

curb_cornell
facebook.com/cornellcurb
cornellcurb.com