Admitting Without Paper

On-line Graduate Admissions to Computer Science

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Admissions to Graduate School

- Students apply to SGS and Department.
- Only students accepted to Dept. are enrolled.
- First cut made by admissions committee.
  - Eliminate definite no's
  - Help identify likely group
- Second cut made by research groups
  - Groups or individuals decide to supervise student.

Admissions prior to 2005/06

- Applications accepted on paper only
- Copies made of all applications for graduate committee
- Copies of likely-looking applications of interest to a research group made for all the research group faculty.
- Lots and lots and lots of paper!

Old System: Pros and Cons

- Pros:
  - Paper is traditionally hard to forge (e.g. signatures on reference letters, transcripts).
  - Familiarity, traditional, proven process.
- Cons:
  - Slow, cumbersome, expensive.
  - Low-tech for a CS department.
  - Multiple copies annotation problem.

Cons getting worse!

Applications to graduate studies in Computer Science climbed dramatically in the past decade, peaking at over 1000 applications.

Department grew, doubling in same period to 50-60 research faculty in 8+ research groups.

Catalysts for Change

- SGS moving to online acceptances to grad school
    - They collect admission fees, assign numbers.
- Most peer departments at other schools admitting on-line, becoming widely accepted.
- Increasing risk of losing good students as on-line application become the "new normal" for peer CS departments

Researching Online Admissions

- Many schools have online systems.

    Custom: Stanford, Princeton, U. Washington, Waterloo, Queens, Berkeley, Brown

    CollegeNet: MIT, Cornell

    SynApps: UBC, Calgary, McMaster, Western

- Most online systems only do collection of applications

    – Applications are reviewed outside the system.

    – Multiple copy comment problem persists.

What do we want?

- Online admissions system
    - Easy to use
    - Review process built-in
    - Reference letters built-in
    - Only accepted students hit paper
- Goals
    - Data entry by participants
    - Unified application space

Goal: Data entry by participants

All participants enter their data: students, referees, and faculty reviewers

➢ Reduce typos, especially email addresses

➢ Help ensure correct filing of references, transcripts, etc.

➢ Reduce staff time requirement, opening envelopes, typing, scanning, copying, etc.

➢ Data can be confirmed by official transcripts.

Goal: Unified application space

All application materials (application, reference letters, transcripts, reviewer's comments) to be found in one place at all times, available as soon as they're provided.

➢ No reference letters waiting to be scanned or filed.

➢ No illegible "margin notes" by reviewers

➢ "Multiple Copy Annotation" problem avoided.

Buy vs. Build

- Buy one?
  - UBC's SynApps seemed most likely candidate.
    - On-line application collection only.
    - Review outside the system (PDF or paper)
    - Expensive to use: $24k/yr
- Build one?
  - No available staff.
  - Limited time.
- Pay someone to build one?
  - Seemed like best option.

Pay-to-Build Options

1. Hire an individual.
2. Piggyback on another effort.
3. Hire a company.

The Hire-an-Individual Option

- Who to hire?
- The "Start From Scratch" problem.
- Contingency issues.

Piggyback on ECE's System

- ECE system being designed in same timeframe.
  - Based on existing conference system used for one conference.
  - An ECE faculty member would do all the coding himself in a few months.
  - We could use it, for share of costs.
  - Willing to modify for us.

ECE Option Drawbacks

- Ambitious schedule.

- Limited track record.

- ECE admission procedure somewhat different from ours.

- Too many eggs in one basket?

Hire Precision Conference Systems

- Who? http://precisionconference.com
  - Provides hosted international conference paper submission and review service.
- Why?
  - James Stewart known/trusted (former faculty, currently adjunct).
  - Several departmental faculty used PCS' service.
  - Good track-record (40+ conferences since 1999)

Conference Submission vs Graduate Admissions

Conference	Grad School
Authors from all over the world submit conference papers.	Applicants from all over the world submit application documents
Papers reviewed by conference committee	Documents reviewed by admissions committee
Paper reviewers provide comments.	Faculty provide comments.
Paper accepted or rejected for conference	Student admitted or not admitted to graduate programme.

PCS Conference Management Software

- Built on open source platform (Linux/Apache/PHP)
- Clean, straightforward user interface
- Straightforward and lightweight application
- Tuned and tested under load.
- Substantial track record.

Overall approach

- PCS modifies their conference system for our graduate admissions process.
- PCS owns the code and is responsible for maintaining it.
- Department hosts server, performs backups.
- DCS pays PCS according to number of applicants (shared risk)

Access to Student Records

- Admissions documents are part of student record for all admitted students.
- Falls under relevant University policy.
- Cannot use PCS remote hosting option.
  - University responsible for implementation of policy; data must stay within University control.
  - PIPEDA requires "informed consent" re: PCS access to data.
- Data backed up, accessible by department.
  - File storage backend, data in standard formats

The DCS Graduate School Admission System

How it looks, how it works.

DCS Graduate Applications

1. Student fills in SGS application
2. Student fills in DCS application
3. Referees sent email from DCS
4. Staff member logs paper received
5. After deadline, initial review by app'n cmtee
6. Reviewers rank candidates
7. Decisions made, notification email sent

DCS gradapps: Initial Application

- Applicant enters email address on a web page
  - Email addresses more unique than names
- Application # assigned for that address
- Unique URL mailed
  - Ensures address is valid
  - 32 character login key not guessable
- Applicant fills in form on web page

File   Edit   View   Go   Bookmarks   Tools   Help

https://gradapps.cs.toronto.edu/~apps/apply

Go

Application to the Departm...

University of Toronto
Department of Computer Science
Graduate Applications System

Application to the Department of Computer Science Graduate Program

The application deadline has passed.

You cannot begin a new application.

Application to the Department of Computer Science's graduate program is a multi-step process. Please follow these instructions carefully. In particular, you must first complete the University of Toronto's School of Graduate Studies online application and pay your application fee *before* completing this Department of Computer Science online application.

To look up your login information for an *existing* application, please provide your email address.

Login instructions will be sent to that address.

Email address

Continue

powered by
PCS

Done   gradapps.cs.toronto.edu

DCS gradapps: Applicant Data

- Contact info (postal address etc.)
- Reference names & email addresses
- Academic history (incl. transcript upload)
- Research interests ("statement of purpose", areas of interest)
- Supporting info (GRE, TOEFL, SGS application number, etc.)

Application form

DCS gradapps: Reference letters

- Email sent to referees supplied by applicant
- Contains URL w/ 32 character key
- Referee types free form letter in text field
- Options to save as draft or submit, and mail copy to self for reference/files

DCS gradapps: Back end

- Username/password for system users:
  - Chair (system administrator)
  - Staff
  - Committee members
  - Reviewers (i.e. researchers)
- Options & permissions tailored to role (eg. able to assign reviewers, enter a review, edit a field, etc.)

University of Toronto
Department of Computer Science
Graduate Applications System

Reviewing Phase

- Applications (view for PC meeting) *new view*
- Committee
- Reviewers
- Registrants
- Final Applications

- Email
    - Send Email to Groups
    - Send Notification Letters
    - Send Reviews to All Reviewers

- Settings
    - Edit Phase Settings
    - Edit Global Settings
    - Edit Forms
    - Edit Notification Letters

- Reports
    - Unassigned Paper Pool
    - Logins
    - Summaries of Submissions: HTML Text Excel
    - Summaries of Final Submissions: HTML Text
    - List of Authors (Excel compatible format)
    - List of Final Authors (Excel compatible format)
    - List of Final Submissions: Version 1, Version 2 (both Excel compatible format)
    - List of Reviewers (Excel compatible format)
    - All Reviews: Word compatible Excel compatible
    - Keywords Statistics (Excel compatible format)
    - Log of sent email
    - Log of HTTP requests

- Miscellaneous
    - Register a Batch of People at Once
    - Assign Reviewers Automatically
    - After Assigning Reviewers
    - Organize Sessions
    - See Web Hierarchy of Final Submissions (use the "pubchair" username and password)
    - See Downloads Directory (use the "downloads" username and password)
    - Frequently asked questions

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DCS gradapps: Initial Review

After application deadline (Fri Dec 16):

- "Phase change" incomplete applications locked out

- Empty applications deleted (~250/1000)

- Remainder divided among 10 committee members (2 x 75 each)

- Choice for each reviewer: "go" "no go"

DCS gradapps: Review phase

- Applicants divided by stated area of interest and delegated to appropriate committee member

- Committee assigns applicant to reviewer(s)

DCS gradapps: Reviewer

- Reviewer logs in on webpage, sees list of assigned applicants
- Selects applicant and sees application, reference letters and comments from other reviewers (example)
- Reviewer can download entire application for offline viewing (eg. on plane, etc.)

DCS gradapps: Notification Phase

- Spreadsheet views allow the chair to sort and select the applicants by various criteria

- Chair records decisions based on committee members recommendations,

- Any number of decisions beyond "accept" and "reject" possible (eg "waitlist")

- Customized email notification of decision

DCS gradapps: Email features

- Email to groups, eg. Incomplete reviewers
- Each email sent separately (no privacy leakage)
- "Notification" emails sent only once (batch processing possible)

DCS gradapps: Next year

- Data exchange with SGS system
- Applicant triggered reminders to referees
- Interface improvements for reviewers (batch actions, fewer click & scrolls)
- Automatic/timed events?

How it worked

- Over 700 applicants
- No decrease in application quality vs. previous years.
- Rock-solid application reliability.
- Dramatic decrease in office staff workload.
- Rave reviews from departmental faculty.

Usability elsewhere

- PCS owns code and system, can potentially deploy for other departments.
- Contact James Stewart <jstewart@precisionconference.com>