

Multidisciplinary Students And Instructors: A Second-Year Games Course

Nathan Sturtevant
University of Alberta
March 14, 2008



DEPARTMENT OF
COMPUTING SCIENCE
UNIVERSITY OF ALBERTA

Collaborators

- Jonathan Schaeffer, CS Department Chair
- H. James Hoover, Finnegan Southey, Michael Bowling (CS)
- Sean Gouglas (Humanities Computing / History)
- Matthew Bouchard (Humanities Computing)
- Ghassan Zabaneh (Industrial Design)
- John Bartoszewski (Lab technician)

January 2005

- Started design of new Computer Game course
 - Interdisciplinary team of collaborators
 - Computing Science
 - History / Humanities
 - Industrial Design
 - Interdisciplinary teams students
- Second year course with no prerequisites

Course Goals

- Create a stimulating, collaborative learning environment
- Give CS students the opportunity to work with students of other disciplines
- Expose non-CS students to intellectual traditions of CS
- Explore theoretical and technical issues of game design

Course Goals

- Practical Goals
 - Engage new students in computing science discipline
 - Give students skills needed for their future careers

“It is one thing to just train students to have a set of skills, but it is much more important to train them to use those skills within the context of an interdisciplinary project. The ability to harmonize with a group is one of the most important employee skills when working for a company such as ours.

Dave Hibbeln, Art Director, BioWare Corp.

Course Overview

- Interdisciplinary Lectures
- Individual Labs
- Group Project

Major Lecture Topics

- Narrative
- Project Management
- Hardware/Graphics Technology Cycles
- Artificial Intelligence
- Cultural Aspects of Gaming
- Game Industry Guests
- *Game postmortems to tie ideas together*

Lab

- Practical experience using course tools
 - Tutorials and other exercises
 - TA interaction
- Lab Exam
 - Motivate students to learn tools

Tools

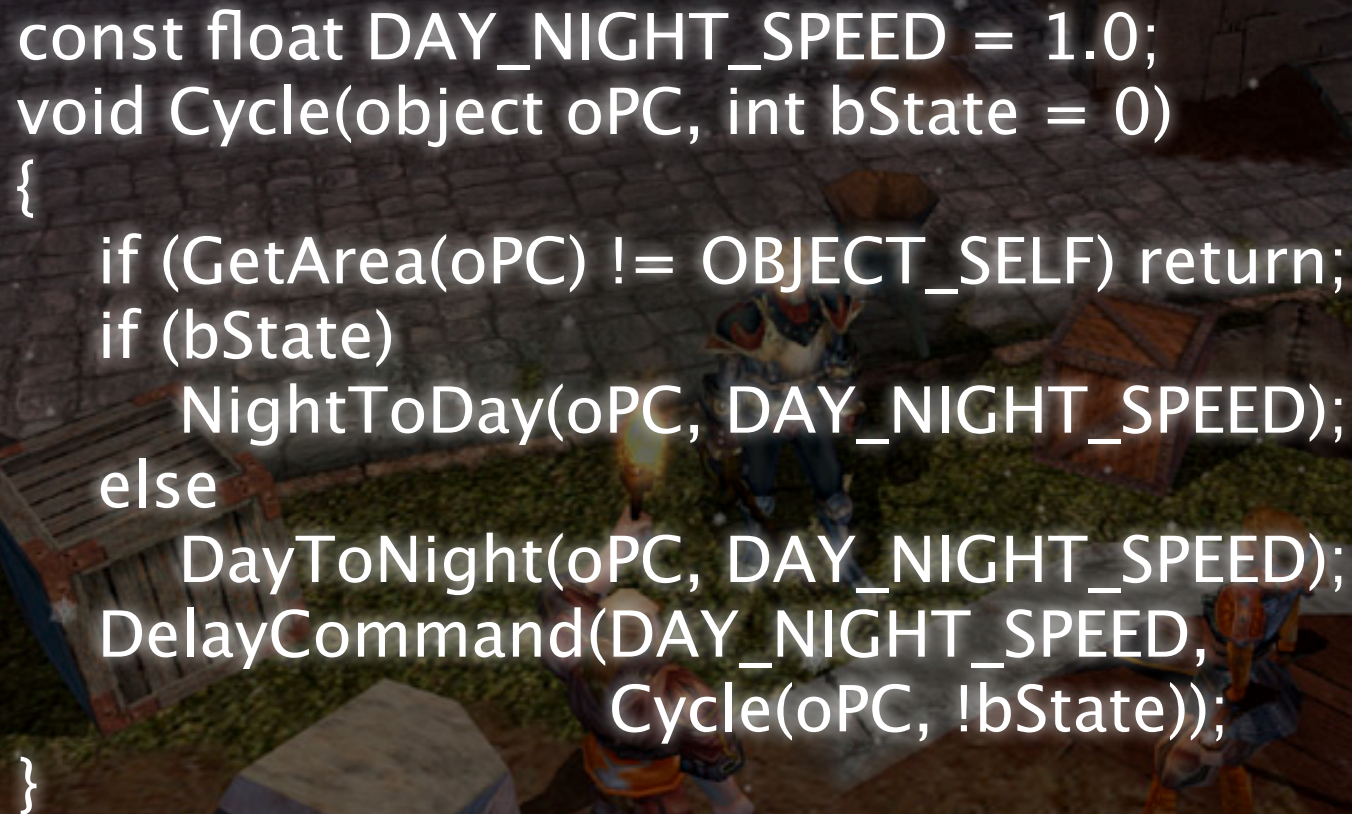
- Neverwinter Nights (BioWare)
- ScriptEase
 - Free scripting tool
 - <http://www.cs.ualberta.ca/~script/>

NWN / NW Script

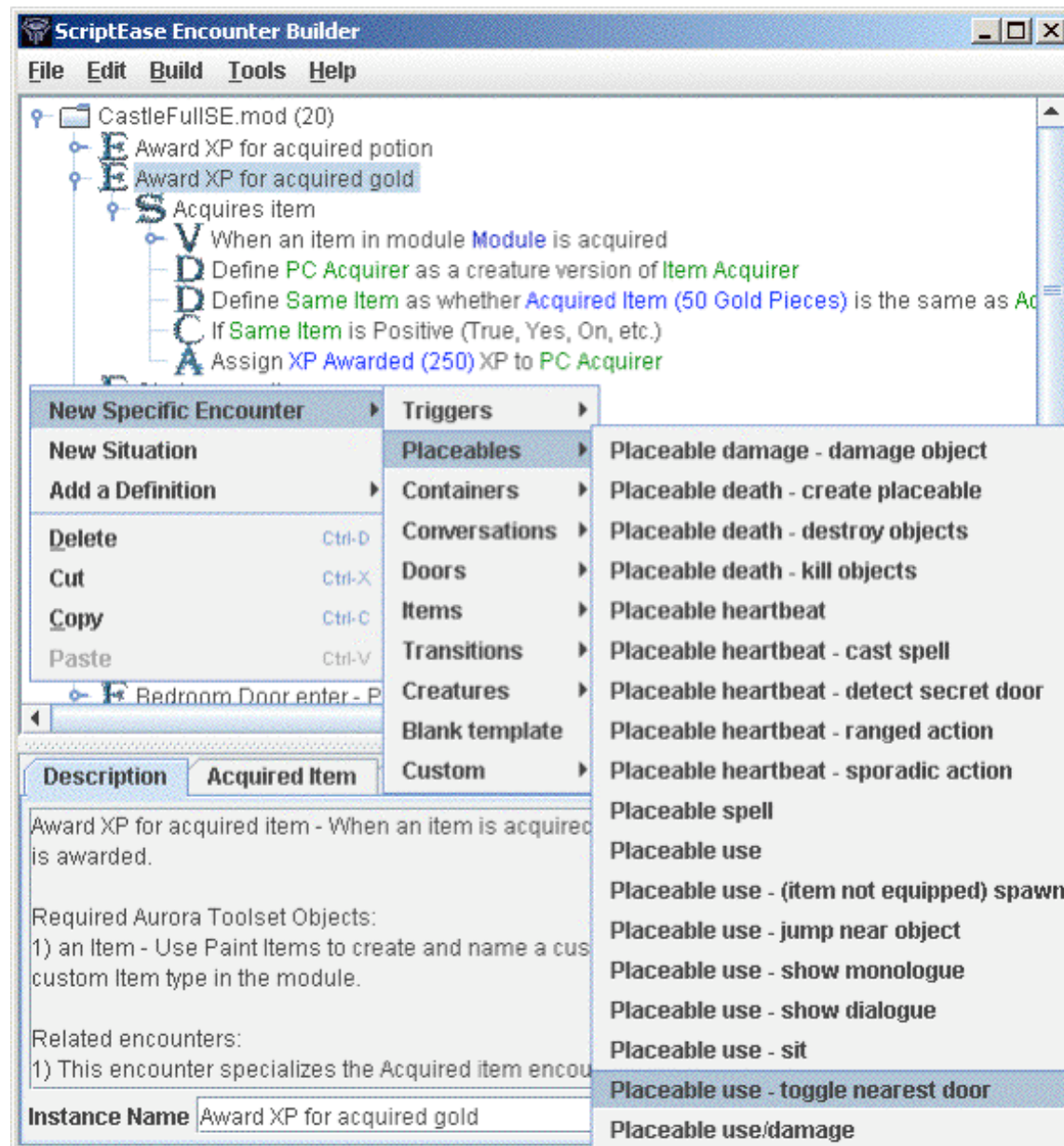


NWN / NW Script

```
const float DAY_NIGHT_SPEED = 1.0;
void Cycle(object oPC, int bState = 0)
{
    if (GetArea(oPC) != OBJECT_SELF) return;
    if (bState)
        NightToDay(oPC, DAY_NIGHT_SPEED);
    else
        DayToNight(oPC, DAY_NIGHT_SPEED);
    DelayCommand(DAY_NIGHT_SPEED,
        Cycle(oPC, !bState));
}
```



ScriptEase



The screenshot shows the ScriptEase Encounter Builder application window. The main area displays a tree view of encounter definitions for 'CastleFullISE.mod (20)'. The tree includes:

- E Award XP for acquired potion
- E Award XP for acquired gold
- S Acquires item
 - V When an item in module **Module** is acquired
 - D Define **PC Acquirer** as a creature version of **Item Acquirer**
 - D Define **Same Item** as whether **Acquired Item (50 Gold Pieces)** is the same as **Acquired Item**
 - C If **Same Item** is Positive (True, Yes, On, etc.)
 - A Assign **XP Awarded (250)** XP to **PC Acquirer**

A context menu is open over the tree, showing options for creating new encounters and definitions, as well as a list of triggers. The 'Placeables' submenu is expanded, showing various actions like 'Placeable damage - damage object', 'Placeable death - create placeable', etc. The 'Placeable use - toggle nearest door' option is highlighted.

At the bottom, a description panel for the selected encounter 'Award XP for acquired gold' is visible, containing details about required Aurora Toolset objects and related encounters. The instance name is 'Award XP for acquired gold'.

Course Project

- Build a short game
 - ~15 minute Neverwinter Nights module
 - Interdisciplinary teams of 3-5 students
 - Open-ended

“In most courses students work on assignments with well defined goals and deadlines. The problems faced in industry are never so simple and clear-cut, so it is valuable for students to work on projects with more uncertainty including a need to adapt and refine goals as the project progresses.”

Loren Andruko, former Director of Programming,
BioWare Corp.

Project Milestones

- Group formation
- Setting Document
- Design Document
- Prototype Walkthrough
- Design Issue Presentation
- Pitch
- Beta
- Release

Student Groups

- Lead designer
 - Facilitate design decisions
- Assistant Producer
 - Help schedule and coordinate group

Experience Counts

- Hire former students from course as “producers”
 - Informal design feedback
 - Hands-on experience
 - Help groups with dynamics

Course Demographics

Year
Fall 05
Winter 06
Fall 06
Winter 07
Fall 07
Winter 08

Course Demographics

Year	Total Enrollment
Fall 05	21
Winter 06	24
Fall 06	14
Winter 07	17
Fall 07	25
Winter 08	24

Course Demographics

Year	Total Enrollment	Male	Female
Fall 05	21	15	6
Winter 06	24	20	4
Fall 06	14	14	0
Winter 07	17	16	1
Fall 07	25	19	6
Winter 08	24	24	0

Course Demographics

Year	Total Enrollment	Male	Female	CS	Science	Arts
Fall 05	21	15	6	6	0	15
Winter 06	24	20	4	7	9	8
Fall 06	14	14	0	8	4	2
Winter 07	17	16	1	11	3	3
Fall 07	25	19	6	13	3	9
Winter 08	24	24	0	7	8	8

Course Evaluation

Year	The instruction was excellent	The course content was excellent
Fall 05	3.8	3.8
Winter 06	4.3	4.7
Fall 06	4.8	4.4
Winter 07	4.9	4.9
Fall 07	4.9	4.9

On a scale of 1...5

Student comments

[CMPUT 250] was one of the most enjoyable and fascinating classes I have ever taken.

[CMPUT 250] is the culmination of great professors from different artistic and technical disciplines that integrates the course into one great learning experience.

Lessons learned

- Storyboard
 - Turned milestone into skeleton walkthrough
- Budget / Project restrictions
 - Students need help limiting their projects

Lessons Learned

- Design Issue Presentations
 - Try to get students to think critically about design choices faced
 - Limits on game can facilitate creative decisions
- Lab / Tools
 - Pay attention to non-CS students

Advice for duplicating course

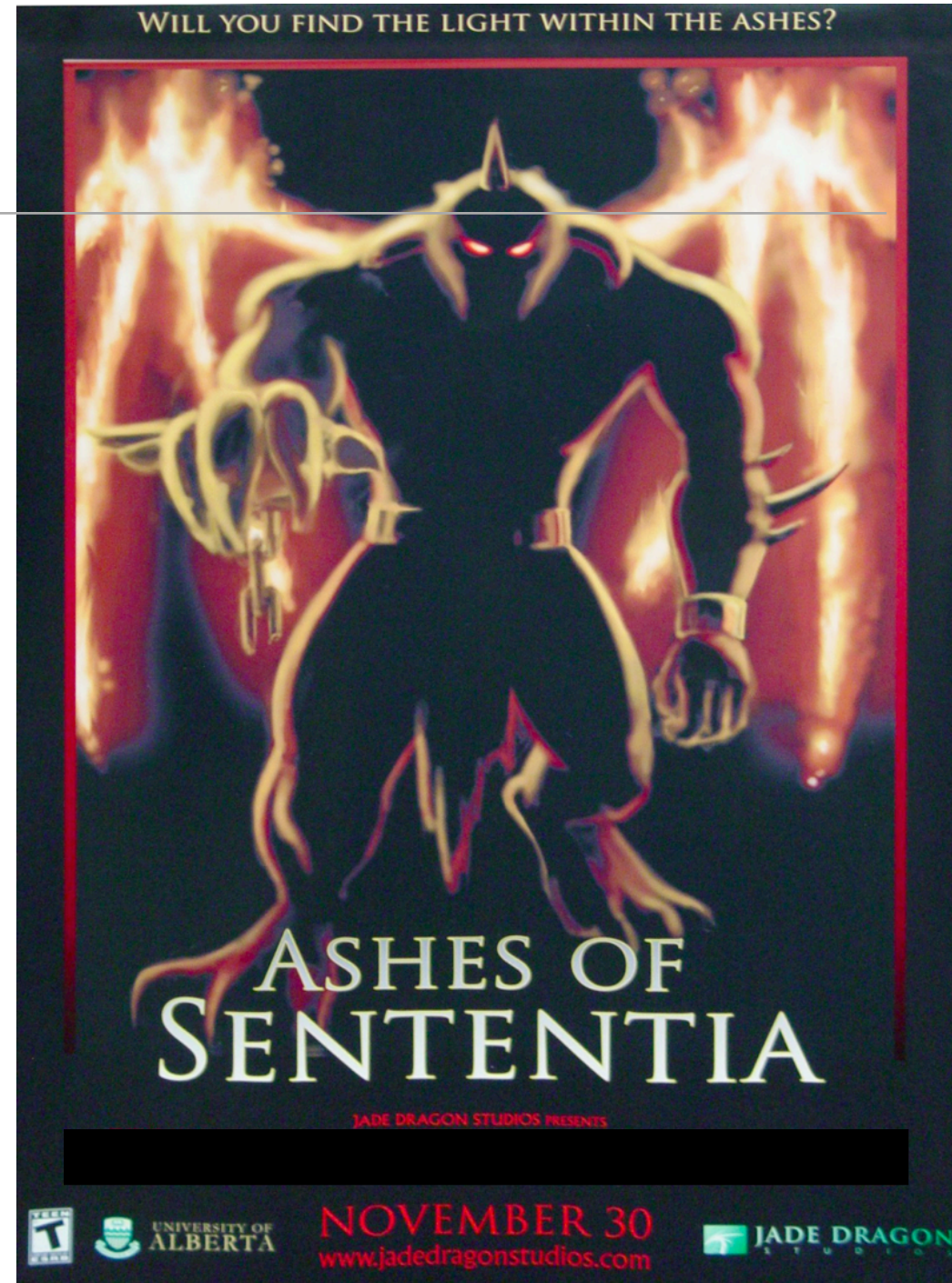
- Persuade the right people
- Cater to your strengths
- Good hardware support
 - Different issues than other courses
- Involve industry

Convincing game companies to help

- Academic Expansion - How Rare Recruits Graduates
- http://www.gamasutra.com/view/feature/3529/academic_expansion__how_rare_.php

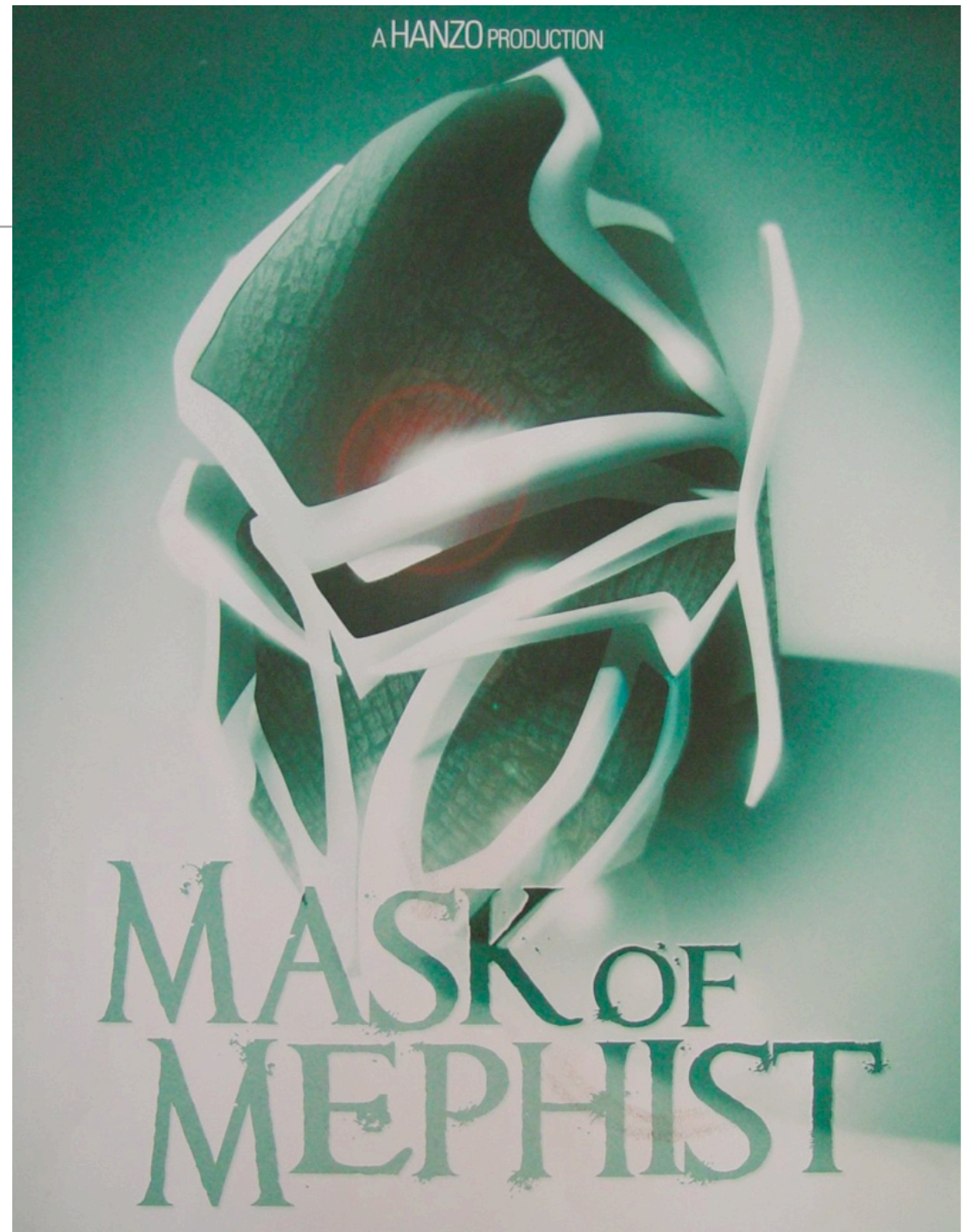
Ashes of Sententia

- Fall, 2005
- Poster



Mask of Mephist

- Winter, 2005
- Poster



Dirge

- Fall, 2007
- Box Art



Cosa Nostra

- Fall, 2007
- Poster



Questions

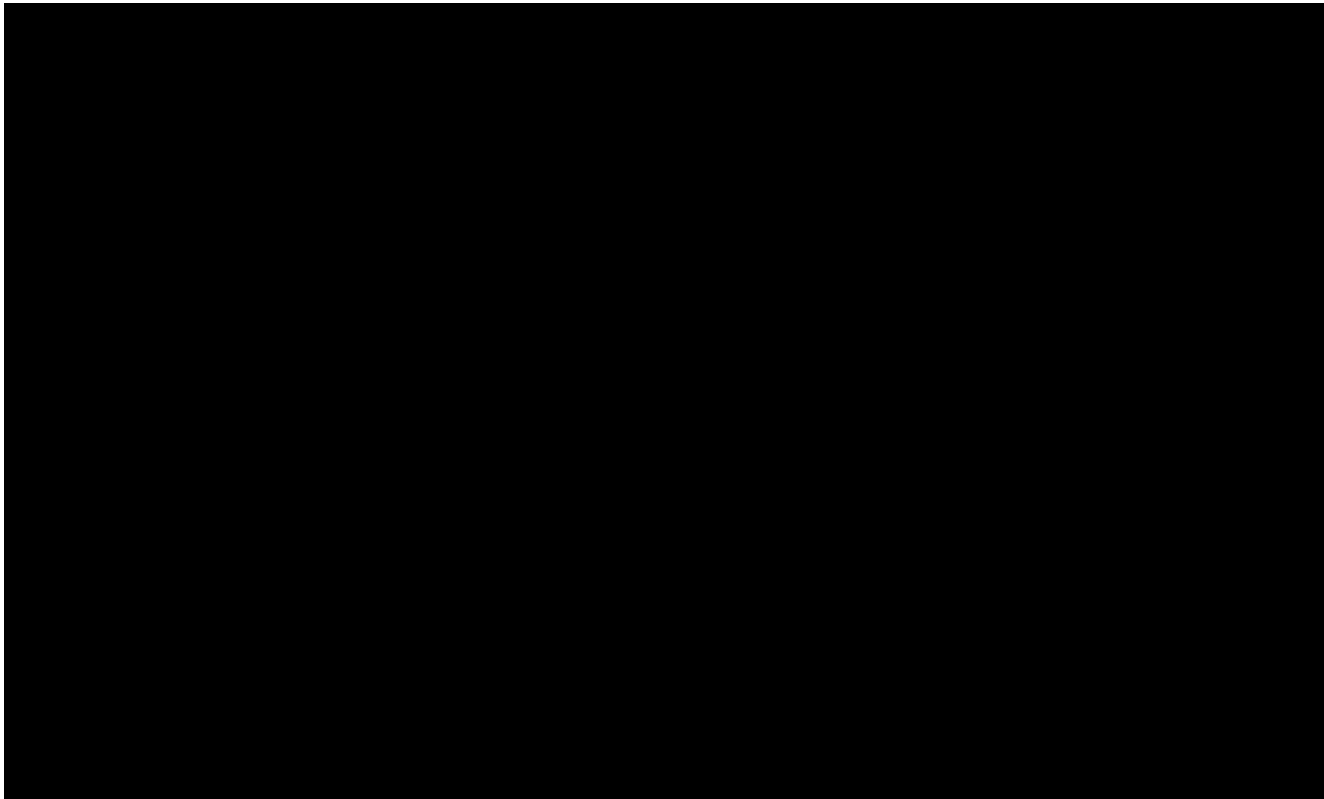
- Slides will be available:

<http://www.cs.ualberta.ca/~nathanst/papers/>

Questions

- Slides will be available:

<http://www.cs.ualberta.ca/~nathanst/papers/>



Questions

- S
h



A dead father...