Carlos Jensen
Research Overview

Who I am

[Image of a group of people with labels: Margaret Burnett, Danny Dig, Alex Groce, Carlos Jensen, Ron Metoyer, Chris Scaffidi]
What Does It Mean To Span HCI and SE?

- We do a lot of research on how/why people do tasks and use tools
- We also research on who does what, who is excluded, and why
- We implement and evaluate solutions to make people more effective, or create more inclusive environments

Online Privacy
Information Provenance

What We Work On: Attention/Workload
Mobile Usability for Very Young Children

Bigger Theme: Open Source Communities and Workflow

- FOSS Pipeline Project
  - Newbies
  - Gender issues
  - Age issues
- FOSS Tools & Techniques
  - Diagramming in FOSS
  - Evaluating Test tools
  - Novel IDE’s
• 98% of large enterprises use FOSS
• FOSS projected to account for 50% of software expenditure in 5 years
• Increasingly a hiring factor for tech organizations

Are we keeping up with demand for FOSS developers?

FOSS Pipeline Project

FOSS use and development growing, but communities are very lopsided

<table>
<thead>
<tr>
<th></th>
<th>Open Source</th>
<th>Traditional Dev (2014)</th>
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<tbody>
<tr>
<td>Contributors</td>
<td>~2 million</td>
<td>18-29 million</td>
</tr>
<tr>
<td>Average Age</td>
<td>27</td>
<td>38</td>
</tr>
<tr>
<td>Women</td>
<td>1.1%</td>
<td>~25%</td>
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<tr>
<td>Geography</td>
<td>80% NA + W. Eur</td>
<td>~1/3 Americas EMEA Asia/Pacific</td>
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If we want more developers, where can we find them?
Train more students
Expand geographically
Promote gender diversity
Promote age diversity
Only 7.1% of FOSS developers are 45 years or older
So why pick on older adults?

Being cognitively active is associated with healthy aging.

Volunteering is a popular way to remain active.

Win-Win for retiring programmers and FOSS communities?

There’s that old phrase, “A fate worse than death for humans is banishment.” Open Source with IRC is this hyperchannel into inclusion. Like the counter of that, it’s a big deal.

Is it worth it?
How to successfully involve older adults in FOSS

Participatory Design Study
Can non-technical older adults contribute to the design and usability of FOSS projects?
- C&C 2013

Interviews of Contributors
How are older adults perceived in the community, what do they add to the community, what are barriers?
- VLHCC 2014

Daily Diary Study
Document real-world joining process as experienced by older adults joining first project
- OpenSym 2014

Workshop
Incorporate lessons learned to enable older adults to successfully join FOSS
- TBD

A “Natural” FOSS Joining Process?

Flowchart showing the joining process including:
- Choose project
- Set up environment
- Look for what to contribute
- Find a way to contribute
- Submit contribution
- Ask for help on contribution
- Receive help
- Ask for help
- Receive help
- Switch projects
- Give up
FOSS Tools & Techniques

Diagramming on FOSS

Mutation Analysis
Myth vs. Reality of bugs in FOSS

Understanding Social Interactions in FOSS
FOSS Tools & Techniques