CodeSurfer:
It Slices, It Chops, But Doesn't Make Julienne Fries

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Demo By Aaron Brown

What is CodeSurfer?

- Code Browser

  - Eases reading and understanding of code

  - Can give you a variety of views of your code and its effects

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CodeSurfer Features

- Pointer Analysis

  – Finds interactions between variables even if affected by pointers

- Global Variable Analysis

  – See how global variables are used by functions

- Call Graphs

  – See how functions interact with each other

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CodeSurfer Features

- Impact Analysis
  - See how a statement affects other statements
- Dataflow Analysis
  - See from where a variable can gets its value
- Whole Program Analysis
  - Finds code interactions between differing files
- Many more...

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CodeSurfer Requirements

- Language
  - C/C++
- Platforms
  - Windows NT/2000/XP
  - Linux
  - Solaris (8 or later)

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History

- ## University of Wisconsin Slicing Tool

  - Susan Horwitz, Thomas Reps and many others

  - Developed from 1996-2000

  - Had all the basic features of CodeSurfer

    - Forward/Backward Slicing, Chopping

    - Control/Flow dependencies

- ## CodeSurfer 1.0

  - June 1999

  - Derived from the WST

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Optional Add-Ons

- PathFinder

  - Not actually a Mars rover

  - Allows you to check properties of all paths through a program

  - Shows you the path that doesn't match your expectations

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Optional Add-Ons

- Programmable API

  - Allows customizing CodeSurfer, integrating with other tools

  - Can access all the internal structures

  - Included scripting language

  - Batch-mode processing

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Cost

- Offer a few packages depending on your needs

	Node Locked	Floating
CodeSurfer Browser	$795	$1495
Browser + PathFinder	$1295	$1995
Browser + PathFinder + API	$3995	$5995

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Academic Licensing

- Available to academic institutions for free
    - Node locked
    - Contains licenses for 3 viewers and 1 builder
    - Request academic users mention them in papers

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Limitations

- Requires you to think in academic terms

- No integration with Eclipse, Visual Studio, etc

- ~100k lines of code is its upper bound

- Has some issues with various types of analysis

  - Only really an issue with irregular code

    - No support for inline assembler

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Sources

- http://www.grammatech.com/
  - GrammaTech

- http://www.cs.wisc.edu/wpis/slicing_tool/
  - The Wisconsin Program Slicing Tool

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