2010 IEEE Symposium on Visual Languages and Human-Centric Computing

VLHCC 2010

Table of Contents

Foreword................................................................................................................................................ix
Conference Committees..........................................................................................................................xi
Additional Reviewers............................................................................................................................xiii
Sponsors....................................................................................................................................................xiv

Keynotes
Model-Driven Research in Human-Centric Computing........................................................................3
    Ed H. Chi
Model-Based Security Engineering with UML: The Last Decade and
towards the Future (Keynote) ................................................................................................................4
    Jan Jürjens

Full and Short Papers

Assisting Programmers
Cleanroom: Edit-Time Error Detection with the Uniqueness Heuristic.....................................................7
    Andrew J. Ko and Jacob O. Wobbrock
Calcite: Completing Code Completion for Constructors Using Crowds.................................................15
    Mathew Mooty, Andrew Faulring, Jeffrey Stylos, and Brad A. Myers
Using Association Metrics to Help Users Navigate API Documentation.............................................23
    Daniel S. Eisenberg, Jeffrey Stylos, Andrew Faulring, and Brad A. Myers

Debugging
Debugging Concurrent Software: A Study Using Multithreaded Sequence
    Diagrams .............................................................................................................................................33
    Scott D. Fleming, Eileen Kraemer, R. E. K. Stirewalt, and Laura K. Dillon
Explanatory Debugging: Supporting End-User Debugging of Machine-Learned Programs ......................................................... 41
     Todd Kulesza, Simone Stumpf, Margaret Burnett, Weng-Keen Wong,
     Yann Riche, Travis Moore, Ian Oberst, Amber Shinsel, and Kevin McIntosh

Does My Model Work? Evaluation Abstractions of Cognitive Modelers ......................................................... 49
     Christopher Bogart, Margaret Burnett, Scott Douglass, David Piorkowski,
     and Amber Shinsel

Games & Learning

Towards the Automatic Recognition of Computational Thinking for Adaptive Visual Language Learning ................................................................. 59
     Kyu Han Koh, Ashok Basawapatna, Vicki Bennett, and Alexander Repenning

Young People’s Descriptions of Computational Rules in Role-Playing Games: An Empirical Study ................................................................. 67
     Judith Good, Katy Howland, and Keiron Nicholson

Analyzing a Process of Collaborative Game Design Involving Online Tools ................................................................. 75
     Sandra B. Fan, Brian R. Johnson, Yun-En Liu, Tyler S. Robison,
     Rolfe R. Schmidt, and Steven L. Tanimoto

First Steps in Coding by Informal Web Developers ................................................................. 79
     Thomas H. Park and Susan Wiedenbeck

Spreadsheets & Neurons

SheetDiff: A Tool for Identifying Changes in Spreadsheets ........................................................................... 85
     Chris Chambers, Martin Erwig, and Markus Luckey

Automatically Inferring ClassSheet Models from Spreadsheets ........................................................................... 93
     Jâcome Cunha, Martin Erwig, and João Saraiva

Causal Reasoning with Neuron Diagrams ........................................................................... 101
     Martin Erwig and Eric Walkingshaw

Graph & Model Transforms

Euler Graph Transformations for Euler Diagram Layout ........................................................................... 111
     Peter Rodgers, Gem Stapleton, John Howse, and Leishi Zhang

A Visual Specification Language for Model-to-Model Transformations ........................................................................... 119
     Esther Guerra, Juan de Lara, Dimitris Kolovos, and Richard Paige

Lightweight Executability Analysis of Graph Transformation Rules ........................................................................... 127
     Elena Planas, Jordi Cabot, Cristina Gómez, Esther Guerra, and Juan de Lara

Web Programming

Programming-by-Example Meets the Semantic Web: Using Ontologies and Web Services to Close the Semantic Gap ........................................................................... 133
     Paul M. K. Gordon, Ken Barker, and Christoph W. Sensen
Design Planning in End-User Web Development: Gender, Feature Exploration and Feelings of Success

Mary Beth Rosson, Hansa Sinha, and Tisha Edor

A Debugging Perspective on End-User Mashup Programming

Jill Cao, Kyle Rector, Thomas H. Park, Scott D. Fleming, Margaret Burnett, and Susan Wiedenbeck

Spiders & Graphs

Introducing Second-Order Spider Diagrams for Defining Regular Languages

Peter Chapman and Gem Stapleton

TimeSpiderTrees: A Novel Visual Metaphor for Dynamic Compound Graphs

Michael Burch, Michael Fritz, Fabian Beck, and Stephan Diehl

Improving Force-Directed Graph Drawings by Making Compromises Between Aesthetics

Weidong Huang, Peter Eades, Seok-Hee Hong, and Chun-Cheng Lin

Understanding Designers & Programmers

Struggling to Excel: A Field Study of Challenges Faced by Spreadsheet Users

Chris Chambers and Chris Scaffidi

Sketching and Drawing in the Design of Open Source Software

Eunyoung Chung, Carlos Jensen, Koji Yatani, Victor Kuechler, and Khai N. Truong

Understanding Expressions of Unwanted Behaviors in Open Bug Reporting

Parmit K. Chilana, Andrew J. Ko, and Jacob O. Wobbrock

How is User Interface Prototyping Really Done in Practice? A Survey of User Interface Designers

Adam S. Carter and Christopher D. Hundhausen

Information Remix and the Motivations of Everyday End-Users

Nan Zang

Visual Languages & Formalisms

Semantic Navigation Strategies for Scenario-Based Programming

Michal Gordon and David Harel

Modular Design by Contract Visually and Formally Using VCL

Nuno Amâlio and Pierre Kelsen

Towards a Formal Notion of Interaction Pattern

Paolo Bottoni, Esther Guerra, and Juan de Lara

Design of a Suite of Visual Languages for Supply Chain Specification

Rick Zhang, John Hosking, John Grundy, Nikolay Mehandjiev, and Martin Carpenter
Posters and Graduate Symposium

Managing Variation in Explanation-Oriented Languages ......................................................... 247  
   Eric Walkingshaw
Democratizing Computational Tools for Interaction Designers .................................................. 249  
   Stephen Oney
Debugging with Evaluation Abstractions ...................................................................................... 251  
   Christopher Bogart
Toward End-User Debugging of Machine-Learned Classifiers ................................................. 253  
   Todd Kulesza
Making Memory Transparent: Design of a Novice Programming Environment for C ................. 255  
   Adam S. Carter and Christopher D. Hundhausen
Studying Onboarding to Improve Program Comprehension Tool Support .................................. 257  
   Rebecca Yates
The Style and Substance of API Names ......................................................................................... 259  
   John M. Daughtry
Supporting Novice Development of Webpage Layouts for Multiple Display Devices .................. 261  
   Thomas H. Park
A Socio-Psychological Approach to Improve Student Participation and Review Quality in Peer Code Reviews .......................................................... 263  
   Pawan Agarwal and Christopher D. Hundhausen
Roles in Online Collaborative Problem Solving ........................................................................... 265  
   Sandra B. Fan
Smart Objects for Intelligent Applications - ADK .................................................................... 267  
   Jesús Fernández Gómez-Pimpollo and Raúl Otaolea
A Recommendation System to Support Design Patterns Selection ........................................... 269  
   Ignacio Navarro, Paloma Diaz, and Alessio Malizia
Sharable Multitouch Screens in Cultural Heritage and Tourism Applications ............................. 271  
   C. Ardito, M. F. Costabile, R. Lanzilotti, and A. L. Simeone
A Collaborative Environment for Spreadsheet-Based Activities .............................................. 273  
   Athula Ginige, Luca Paolino, Monica Sebillo, Genoveffa Tortora, Marco Romano, and Giuliana Vitiello

Author Index ................................................................................................................................. 275