

# Pedro Szekely

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## Personal

- Birthdate: May 16, 1957
- Birthplace: Bogota, Colombia
- Citizenship: United States

## Education

- **Ph.D.** in Computer Science, Carnegie-Mellon University, Pittsburgh, 1987  
Dissertation: *Separating the User Interface from the Functionality of Application Programs*  
Advisor: *Philip J. Hayes*
- **M.S.** in Computer Science, Carnegie-Mellon University, Pittsburgh, 1982
- **B.S.** in Mathematics, Universidad de los Andes, Bogota, Colombia, 1980
- **B.S.** in Computer Science, Universidad de los Andes, Bogota, Colombia, 1979

## Professional

- **Program Chair:** Intelligent User Interfaces Conference (IUI 2013)
- **Conference Chair:** Intelligent User Interfaces Conference (IUI 2000)
- **Conference Chair:** User Interface Software and Technology (UIST 1994)
- **Workshop Organizer:** Help Me Help You: Bridging the Gaps in Human-Agent Collaboration (AAAI Spring Symposium 2011)
- **Workshop Organizer:** Transforming the UI for Anyone (CHI 2001)
- **Plenary Speaker:** Retrospective and Challenges for Model-Based Interface Development (CADUI 1995)

- **Program Committee and/or Paper Reviewer:** AAAI, AAMAS, CADUI, CHI, ESWC, HCI, ISWC, IUI, UIST (multiple years)
- **Review Panel:** (NSF 1998)

## Awards

- **Best In-Use Paper:** Pedro Szekely, Craig A Knoblock, Yang Fengyu, Xuming Zhu, Eleanor Fink, Rachel Allen, and Georgina Goodlander. Connecting the Smithsonian American Art Museum to the Linked Data Cloud (ESWC 2013).
- **Best Demonstration:** Rajiv T Maheswaran, Craig M Rogers, Romeo Sanchez, and Pedro Szekely. Decision-Support for Real-Time Multi-Agent Coordination (AAMAS 2010).
- **ISI Meritorious Service Award:** Winners of DARPA COORDINATORS program evaluation (2007)
- **ISI Meritorious Service Award:** Winners of DARPA COORDINATORS program evaluation (2006)
- **ISI Meritorious Service Award:** Delivering working system to Defense Logistics Agency, DEALMAKER project (1999)

## Teaching

- **Information Integration on the Web** (CS 548), University of Southern California. Spring 2012 (*student evaluation 3.89*), Spring 2013 (*student evaluation 4.37*), Fall 2013 (*student evaluation 4.31*), Spring 2014 and Fall 2014 (two sections). *The student evaluation score rates Szekely's teaching ("Overall, how would you rate this instructor?") on a scale of 1.00 (poor) to 5.00 (excellent).*
- **Introduction to Semantic Web**, Universidad Javeriana, Colombia. Summer 2013.
- **Introduction to Semantic Web**, Universidad de Los Andes, Colombia. Summer 2012.
- **Human Computer Interaction** (CS 588), University of Southern California. 1996.
- **Model-Based User Interface Development** (Tutorial), CHI Conference. 1994.
- **Linear Algebra, Calculus, Set Theory**, Universidad de Los Andes, Colombia. 1979-1980.

## Ph.D. Students

### Ph.D. Advisor/Co-Advisor

- 1992: Ping Luo (USC), PhD primary advisor, graduated.
- 1994: Ewald Salcher (University of Graz, Austria), PhD co-advisor, graduated.

- 2004: Juan Francisco Lopez (USC), PhD primary advisor, graduated.
- 2008: Rattapoom Tuchinda (USC), Ph.D. co-advisor, graduated.
- 2009: Jing Jin (USC), Ph.D. primary advisor, graduated. Winner of the Most Creative Ph.D. Dissertation award in the USC Viterbi School of Engineering.
- current: Christian Ariza (Universidad de los Andes), Ph.D. co-advisor.

## Ph.D. Dissertation Committee Member

- 1996: Ali Erdem (USC), Dissertation committee, graduated.
- 1996: Ken Anderson (UCI), Dissertation committee, graduated.
- 2003: In-Young Ko (USC), Dissertation committee, graduated.
- 2006: Ranbo Yu (USC): Dissertation committee, graduated.
- 2009: Sang Yun Lee (USC), Dissertation committee, graduated.
- 2009: Harris Chiu (USC), Dissertation committee, in progress.

## Contracts

### Principal Investigator and Co-Principal Investigator

- Text-enabled Humanitarian Operations Run-time Framework. Agency: DARPA. Period of Support: 1 May 2015 to 30 April 2019 (**PI**). \$2,209,000.
- Domain-Specific Insight Graphs. Agency: DARPA. Period of Support: 1 October 2014 to 30 September 2017 (**PI**). \$8,000,000.
- NS CTA Option Yrs 6 and 7 (Co-PI). Agency: ARL. Period of Support: Sep-28-2014 to Sep-27-2016 (**Co-PI**). \$451,760.
- SocialViz, DARPA/STTR, 2012 - present (**PI**). *Phase 1: \$58,200, Phase 2 awarded: \$750,000.*
- GAMBIT: Geospatial Analysis of Motion-Based Intelligence and Tracking, ONR 2012 - 2013 (**Co-PI**). \$2,520,000.
- COMPASS: Criticality, Options and Metrics for Plan Analysis by Stochastic Simulation, DARPA. 2010 - 2011 (**Co-PI**). \$1,200,000.
- LANdroids: Distributed Control Algorithms, DARPA. 2008 (**Co-PI**) \$549,999.
- MARBLES: negotiation technology, AFOSR. 2002 - 2005 (**Co-PI**) \$496,707.
- WEBScripTER: semantic web, DARPA. 2000 - 2004 (**Co-PI**) \$1,359,824.
- Product News Network: user interfaces, Thomas Register. 1997 - 1998 (**PI**)
- MASTERMIND: user interfaces, DARPA, 1995 - 2000 (**PI**)

## Project Leader

- Smithsonian American Art, Smithsonian Institution, 2012 - 2013. *\$200,000*.
- CSC: multi-agent coordination, DARPA. 2005 - 2010. *\$11,177,741*.
- CAMERA: negotiation technology. DARPA. 1998 - 2004.
- DEALMAKER: user interfaces, expert systems, DARPA and DLA (Defense Logistics Agency). 1996 - 1999.

## Key Personnel

- DOVETAIL: Domain Vocabulary Extraction and Transduction + Auto-Induction of Layout, IARPA, 2010 - 2013. *\$1,577,164*.
- Heracles: Information integration and human computer interaction, SOCOM. 2005 - 2007.
- CARTE: negotiation technology, ONR. 2003 - 2005. *\$4,490,887*.
- SHELTER: user interfaces, knowledge acquisition, DARPA, 1992 - 1995.
- DRAMA: user interfaces, expert systems, DARPA, 1989 - 1992.
- BEAMER: user interfaces, DARPA, research scientist, 1988- 1989.

## Publications

### Journal Publications

- [1] Philip J. Hayes and Pedro Szekely. Graceful Interaction Through the COUSIN Command Interface. *International Journal of Man-Machine Studies*, 19(3):285–306, 1983.
- [2] Brad Vander Zanden, Brad A Myers, Dario A Giuse, and Pedro Szekely. Integrating pointer variables into one-way constraint models. *Transactions on Computer-Human Interaction (TOCHI)*, 1(2):161–213, June 1994.
- [3] Bradley T Vander Zanden, Richard Halterman, Brad A Myers, Rich McDaniel, Rob Miller, Pedro Szekely, Dario A Giuse, and David Kosbie. Lessons learned about one-way, dataflow constraints in the Garnet and Amulet graphical toolkits. *Transactions on Programming Languages and Systems (TOPLAS)*, 23(6):776–796, November 2001.
- [4] Min Cai, Martin Frank, Jinbo Chen, and Pedro Szekely. MAAN: A Multi-Attribute Addressable Network for Grid Information Services. *Journal of Grid Computing*, 2(1):184–191, 2004.
- [5] Bradley T Vander Zanden, Richard L Halterman, Brad A Myers, Robert C Miller, Pedro Szekely, Dario A Giuse, David S Kosbie, and Richard G McDaniel. Lessons learned from programmers' experiences with one-way constraints. *Softw. Pract. Exper*, 35(13):1275–1298, 2005.

- [6] Rattapoom Tuchinda, Craig A Knoblock, and Pedro Szekely. Building Mashups by Demonstration. *ACM Transactions on the Web (TWEB)*, 5(3):1–45, July 2011.
- [7] Reza Nourjou, Stephen F Smith, Michinori Hatayama, Norio Okada, and Pedro Szekely. Dynamic assignment of geospatial-temporal macro tasks to agents under human strategic decisions for centralized scheduling in multi-agent systems. *International Journal of Machine Learning and Computing (IJMLC)*, 4(1):39–46, 2014.
- [8] Reza Nourjou, Stephen F Smith, Michinori Hatayama, and Pedro Szekely. Intelligent algorithm for assignment of agents to human strategy in centralized multi-agent coordination. *Journal of Software*, 9(10):2586–2597, 2014.
- [9] Reza Nourjou, Pedro Szekely, Michinori Hatayama, Mohsen Ghafory-Ashtiany, and Stephen F Smith. Data model of the strategic action planning and scheduling problem in a disaster response team. *Journal of Disaster Research*, 9(3):381–399, 2014.
- [10] Pedro Szekely, Craig A Knoblock, Fengyu Yang, Eleanor E Fink, Shubham Gupta, Rachel Allen, and Georgina Goodlander. Publishing the data of the smithsonian american art museum to the linked data cloud. *International Journal of Humanities and Arts Computing*, 8(supplement):152–166, 2014.
- [11] Craig A Knoblock and Pedro Szekely. Exploiting semantics for big data integration. *AI Magazine*, 36(1):25–38, 2015.

## Conference Publications

- [1] Philip J Hayes, Pedro Szekely, and Richard A Lerner. Design alternatives for user interface management systems based on experience with COUSIN. In *CHI’85: Proceedings of the SIGCHI conference on Human factors in computing systems*. ACM Request Permissions, April 1985.
- [2] Pedro Szekely. Standardizing the Interface Between Applications and UIMSs. In *Proceedings of the 2nd annual ACM Symposium on User Interface Software and Technology (UIST 1989)*, pages 34–42. ACM, 1989.
- [3] Pedro Szekely. Template-based mapping of application data interactive displays. In Scott E Hudson, editor, *Proceedings of the 3rd Annual ACM Symposium on User Interface Software and Technology (UIST 1990), Snowbird, Utah, USA, October 3-5, 1990*, pages 1–9. ACM, 1990.
- [4] Zanden, Brad Vander, Myers, Brad A, Dario Giuse, and Pedro Szekely. The Importance of Pointer Variables in Constraint Models. In James R Rhyne, editor, *Proceedings of the 4th Annual ACM Symposium on User Interface Software and Technology (UIST 1991), Hilton Head, South Carolina, USA, November 11-13, 1991*, pages 155–164. ACM, 1991.

- [5] Pedro Szekely, Ping Luo, and Robert Neches. Facilitating the Exploration of Interface Design Alternatives: The HUMANOID Model of Interface Design. In *Proceedings of ACM CHI'92 Conference on Human Factors in Computing Systems*, pages 507–515, 1992.
- [6] Ping Luo, Pedro Szekely, and Robert Neches. Management of Interface Design in HUMANOID. In *CHI '93: Proceedings of the INTERACT '93 and CHI '93 conference on Human factors in computing systems*, pages 107–114, New York, NY, USA, 1993. ACM.
- [7] Robert Neches, Peter Aberg, David Benjamin, Brian Harp, Liyi Hu, Ping Luo, Roberto Moriyon, and Pedro Szekely. The Integrated User-Support Environment (IN-USE) Group at USC/ISI. In *CHI '93: Proceedings of the INTERACT '93 and CHI '93 conference on Human factors in computing systems*, pages 53–54, New York, NY, USA, 1993. ACM.
- [8] Pedro Szekely, Ping Luo, and Robert Neches. Beyond Interface Builders: Model-Based Interface Tools. In *CHI '93: Proceedings of the INTERACT '93 and CHI '93 conference on Human factors in computing systems*, pages 383–390, 1993.
- [9] Roberto Moriyon, Pedro Szekely, and Robert Neches. Automatic Generation of Help from Interface Design Models. In *Proceedings of ACM CHI'94 Conference on Human Factors in Computing Systems*, pages 225–231, 1994.
- [10] Pedro Szekely, Piyawadee Noi Sukaviriya, Pablo Castells, Jeyakumar Muthukumarasamy, and Ewald Salcher. Declarative Interface Models for User Interface Construction Tools: the MASTER-MIND Approach. In Leonard J Bass and Claus Unger, editors, *Engineering for Human Computer Interaction (EHCI)*, pages 120–150. Chapman and Hall, 1995.
- [11] Pablo Castells, Pedro Szekely, and Ewald Salcher. Declarative Models of Presentation. In *Proceedings of the 2nd international conference on Intelligent user interfaces (IUI 1997)*, pages 137–144, Orlando, Florida, United States, 1997. ACM.
- [12] Martin R Frank and Pedro Szekely. Adaptive Forms: An Interaction Paradigm for Entering Structured Data. In *Proceedings of the 3rd international conference on Intelligent user interfaces (IUI 1998)*, pages 153–160, San Francisco, California, United States, January 1998. ACM.
- [13] Francisco Saiz, Pedro Szekely, and Patel Devang. Customized Web-Based Data Presentation. In Hermann A Maurer and Richard G Olson, editors, *Proceedings of WebNet 98 - World Conference on the WWW and Internet Intranet, Orlando, Florida, USA, November 7-12, 1998*. AACE, 1998.
- [14] Pablo Castells and Pedro A Szekely. HandsOn: Dynamic Interface Presentations by Example. In Hans-Jorg Bullinger and Jurgen Ziegler, editors, *Human-Computer Interaction: Ergonomics and User Interfaces, Proceedings of HCI International '99 (the 8th International Conference on Human-Computer Interaction), Munich, Germany, August 22-26, 1999, Volume 1*, pages 1288–1292. Lawrence Erlbaum, 1999.
- [15] Martin Frank and Pedro Szekely. Collapsible User Interfaces for Information Retrieval Agents. In *Proceedings of the 4th international conference on Intelligent user interfaces (IUI 1999)*, pages 15–22, Los Angeles, CA, USA, 1999. ACM.

- [16] Pedro Szekely, Rogers, Craig Milo, and Martin Frank. Interfaces for Understanding Multi-Agent Behavior. In *Proceedings of the 2001 International Conference on Intelligent User Interfaces (IUI 2001)*, pages 161–166, 2001.
- [17] Min Cai, Martin Frank, Jinbo Chen, and Pedro Szekely. Maan: a multi-attribute addressable network for grid information services. pages 184 – 191, nov. 2003.
- [18] Baoshi Yan, Martin R Frank, Pedro Szekely, Robert Neches, and Juan Lopez. WebScripter: Grass-Roots Ontology Alignment via End-User Report Creation. In Dieter Fensel, Katia P Sycara, and John Mylopoulos, editors, *The Semantic Web, Second International Semantic Web Conference (ISWC 2003), Sanibel Island, FL, USA, October 20-23, 2003, Proceedings*, pages 676–689. Springer, 2003.
- [19] Pedro Szekely, Marcel Becker, Stephen Fitzpatrick, Gergely Gati, David Hanak, Jing Jin, Gabor Karsai, Rajiv T Maheswaran, Bob Neches, Craig M Rogers, Romeo Sanchez, and Chris van Buskirk. CSC: Criticality-Sensitive Coordination. In *Proceedings of the fifth international joint conference on Autonomous agents and multiagent systems (AAMAS 2006)*. ACM, May 2006.
- [20] Pedro Szekely, Marcel Becker, Stephen Fitzpatrick, Gergely Gati, David Hanak, Jing Jin, Gabor Karsai, Rajiv T Maheswaran, Robert Neches, Craig Milo Rogers, Romeo Sanchez, and Christopher P van Buskirk. CSC: Criticality-Sensitive Coordination. In Hideyuki Nakashima, Michael P Wellman, Gerhard Weiss, and Peter Stone, editors, *5th International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS 2006), Hakodate, Japan, May 8-12, 2006*, pages 1441–1442. ACM, 2006.
- [21] Tim Harbers, Rajiv T Maheswaran, and Pedro Szekely. Centralized, Distributed or Something Else? Making Timely Decisions in Multi-Agent Systems. In *AAAI 2007*, pages 738–743. AAAI Press, 2007.
- [22] Jing Jin, Rajiv T Maheswaran, Romeo Sanchez, and Pedro Szekely. VizScript: visualizing complex interactions in multi-agent systems. In Jing Jin, Rajiv T Maheswaran, Romeo Sanchez, and Pedro A Szekely, editors, *Proceedings of the 12th international conference on Intelligent user interfaces (IUI 2007)*, pages 369–372. ACM Request Permissions, January 2007.
- [23] Rattapoom Tuchinda, Pedro Szekely, and Craig A Knoblock. Building Data Integration Queries by Demonstration. In *Proceedings of the 12th international conference on Intelligent user interfaces (IUI 2007)*, pages 170–179, 2007.
- [24] Jing Jin, Romeo Sanchez, Rajiv T Maheswaran, and Pedro Szekely. VizScript: on the creation of efficient visualizations for understanding complex multi-agent systems. In Jeffrey M Bradshaw, Henry Lieberman, and Steffen Staab, editors, *Proceedings of the 2008 International Conference on Intelligent User Interfaces (IUI 2008), January 13-16, 2008, Gran Canaria, Canary Islands, Spain*, pages 40–49. ACM, 2008.
- [25] Rajiv T Maheswaran and Pedro Szekely. Criticality Metrics for Distributed Plan and Schedule Management. In Jussi Rintanen, Bernhard Nebel, J Christopher Beck, and Eric A Hansen, editors, *Proceedings of the Eighteenth International Conference on Automated Planning and Scheduling (ICAPS 2008), Sydney, Australia, September 14-18, 2008*, pages 214–221. AAAI, 2008.

- [26] Rajiv T Maheswaran, Pedro Szekely, Marcel Becker, Stephen Fitzpatrick, Gergely Gati, Jing Jin, Robert Neches, N Noori, C Rogers, Romeo Sanchez, Kevin Smyth, and Chris VanBuskirk. Predictability & criticality metrics for coordination in complex environments. In Rajiv T Maheswaran, Pedro A Szekely, Marcel Becker, Stephen Fitzpatrick, Gergely Gati, Jing Jin, Robert Neches, N Noori, C Rogers, Romeo Sanchez, Kevin Smyth, and Chris VanBuskirk, editors, *Proceedings of the 7th international joint conference on Autonomous agents and multiagent systems (AAMAS 2008)*, pages 647–654. International Foundation for Autonomous Agents and Multiagent Systems, May 2008.
- [27] Romeo Sanchez, Jing Jin, Rajiv T Maheswaran, and Pedro Szekely. Interfaces for team coordination. In Jeffrey M Bradshaw, Henry Lieberman, and Steffen Staab, editors, *Proceedings of the 2008 International Conference on Intelligent User Interfaces (IUI 2008), January 13-16, 2008, Gran Canaria, Canary Islands, Spain*, pages 427–428. ACM, 2008.
- [28] Rattapoom Tuchinda, Pedro Szekely, and Craig A Knoblock. Building Mashups by Example. In Jeffrey M Bradshaw, Henry Lieberman, and Steffen Staab, editors, *Proceedings of the 2008 International Conference on Intelligent User Interfaces (IUI 2008), January 13-16, 2008, Gran Canaria, Canary Islands, Spain*, pages 139–148, New York, NY, USA, 2008. ACM.
- [29] Hi Cchi H Chiu, Bo Ryu, Hua Zhu, Pedro Szekely, Rajiv T Maheswaran, Craig Milo Rogers, Aram Galstyan, Behnam Salemi, Michael Rubenstein, and Wei-Min Shen. TENTACLES: Self-configuring robotic radio networks in unknown environments. In *IROS*, pages 1383–1388. IEEE, 2009.
- [30] Jing Jin and Pedro Szekely. QueryMarvel: A visual query language for temporal patterns using comic strips. In *VL/HCC*, pages 207–214, Washington, DC, USA, 2009. IEEE.
- [31] Rajiv Maheswaran, Craig Milo Rogers, Romeo Sanchez, Pedro Szekely, Gergely Gati, Kevin Smyth, and Chris VanBuskirk. Multi-agent systems for the real world. In *Proceedings of The 8th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2009)*. International Foundation for Autonomous Agents and Multiagent Systems, May 2009.
- [32] Rajiv T Maheswaran, Craig Milo Rogers, Romeo Sanchez, Pedro Szekely, Gergely Gati, Kevin Smyth, and Chris VanBuskirk. Multi-agent systems for the real world. In Carles Sierra, Cristiano Castelfranchi, Keith S Decker, and Jaime Simão Sichman, editors, *8th International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS 2009), Budapest, Hungary, May 10-15, 2009, Volume 2*, pages 1281–1282. IFAAMAS, 2009.
- [33] Jing Jin and Pedro Szekely. Interactive Querying of Temporal Data Using A Comic Strip Metaphor. In *Proceedings IEEE Conference on Visual Analytics Science and Technology*, Salt Lake City, Utah, October 2010.
- [34] Yolanda Gil, Pedro Szekely, Sandra Villamizar, Thomas C Harmon, Varun Ratnakar, Shubham Gupta, Maria Muslea, Fabio Silva, and Craig A Knoblock. Mind Your Metadata: Exploiting Semantics for Configuration, Adaptation, and Provenance in Scientific Workflows. In *Proceedings of the Tenth International Semantic Web Conference (ISWC 2011)*, Bonn, Germany, 2011.
- [35] Rajiv T Maheswaran, Pedro Szekely, and Romeo Sanchez. Automated Adaptation of Strategic Guidance in Multiagent Coordination. In *Proceedings of the 14th International Conference on Principles and Practice of Multi-Agent Systems (PRIMA 2011)*, Wollongong, Australia, November 2011.



- [36] Craig A Knoblock, Pedro Szekely, Jose Luis Ambite, Aman Goel, Shubham Gupta, Kristina Lerman, Maria Muslea, Mohsen Taheriyani, and Parag Mallick. Semi-automatically mapping structured sources into the semantic web. In *Proceedings of the 9th international conference on The Semantic Web: research and applications (ESWC 2012)*, pages 375–390, Berlin, Heidelberg, 2012. Springer-Verlag.
- [37] Pedro Szekely, Rajiv T Maheswaran, Yu-Han Chang, Yan Wang, Huihui Cheng, and Karan Singh. Interactive Uncertainty Analysis. In *Proceedings of the 2012 International Conference on Intelligent User Interfaces (IUI 2012), February 14-17, 2012, Lisbon, Portugal*. ACM, 2012.
- [38] Mohsen Taheriyani, Craig A. Knoblock, Pedro Szekely, and Jose Luis Ambite. Rapidly integrating services into the linked data cloud. In *Proceedings of the 11th International Semantic Web Conference (ISWC 2012)*, 2012.
- [39] Pedro Szekely, Craig A Knoblock, Yang Fengyu, Xuming Zhu, Eleanor Fink, Rachel Allen, and Georgina Goodlander. Connecting the Smithsonian American Art Museum to the Linked Data Cloud (best in-use paper). In *Proceedings of the 10th Extended Semantic Web Conference (ESWC 2013)*, Montpellier, May 2013.
- [40] Mohsen Taheriyani, Craig A. Knoblock, Pedro Szekely, and Jose Luis Ambite. A graph-based approach to learn semantic descriptions of data sources. In *Proceedings of the 12th International Semantic Web Conference (ISWC 2013)*, 2013.
- [41] Anastasia Dimou, Miel Vander Sande, Jason Slepicka, Pedro Szekely, Erik Mannens, Craig Knoblock, and Rik Van de Walle. Mapping hierarchical sources into rdf using the rml mapping language. In *Semantic Computing (ICSC), 2014 IEEE International Conference on*, pages 151–158. IEEE, 2014.
- [42] Eleanor E Fink, Pedro Szekely, and Craig A Knoblock. How linked open data can help in locating stolen or looted cultural property. In *Digital Heritage. Progress in Cultural Heritage: Documentation, Preservation, and Protection*, pages 228–237. Springer International Publishing, 2014.
- [43] Mohsen Taheriyani, Craig A Knoblock, Pedro Szekely, and Jose Luis Ambite. A scalable approach to learn semantic models of structured sources. In *Semantic Computing (ICSC), 2014 IEEE International Conference on*, pages 183–190. IEEE, 2014.
- [44] Bo Wu, Pedro Szekely, and Craig A Knoblock. Minimizing user effort in transforming data by example. In *Proceedings of the 19th international conference on Intelligent User Interfaces*, pages 317–322. ACM, 2014.
- [45] Om P Patri, Ketan Singh, Pedro Szekely, Anand V Panangadan, and Viktor K Prasanna. Personalized trip planning by integrating multimodal user-generated content. In *Semantic Computing (ICSC), 2015 IEEE International Conference on*, pages 381–388. IEEE, 2015.

## Workshop, Demo and Poster Publications

- [1] Robert Neches, Jim Foley, Pedro Szekely, Piyawadee Sukaviriya, Ping Luo, Srdjan Kovacevic, and Scott Hudson. Knowledgeable Development Environments Using Shared Design Models. In *Proceedings of the 1993 International Workshop on Intelligent User Interfaces*, pages 63–70, 1993.
- [2] Angel R Puerta, Robert Neches, Henrik Eriksson, Pedro Szekely, Ping Luo, and Mark A Musen. Toward Ontology-Based Frameworks for Knowledge-Acquisition Tools. In *In Proceedings of the Eighth KnowledgeAcquisition Workshop for Knowledge-Based Systems*, 1994.
- [3] Pedro A Szekely. User Interface Prototyping: Tools and Techniques. In Richard N Taylor and Joelle Coutaz, editors, *ICSE Workshop on SE-CHI*, pages 76–92. Springer, 1994.
- [4] Pedro A Szekely. Retrospective and Challenges for Model-Based Interface Development. In Francois Bodart and Jean Vanderdonckt, editors, *Design, Specification and Verification of Interactive Systems'96, Proceedings of the Third International Eurographics Workshop, June 5-7, 1996, Namur, Belgium*, pages 1–27. Springer, 1996.
- [5] Pablo Castells and Pedro A Szekely. Presentation Models by Example. In David J Duke and Angel R Puerta, editors, *Design, Specification and Verification of Interactive Systems'99, Proceedings of the Eurographics Workshop in Braga, Portugal, June 2-4, 1999*, pages 100–116. Springer, 1999.
- [6] Pedro Szekely, Bob Neches, David Benjamin, Jinbo Chen, and Craig Milo Rogers. Controlling Supplier Selection in an Automated Purchasing System. In *In Proceedings of the AAAI'99 Workshop on AI in Electronic Commerce (AIEC'99)*, Menlo Park, California, June 1999. AAAI Press.
- [7] Pedro Szekely, Bob Neches, David Benjamin, Jinbo Chen, and Craig Milo Rogers. DEALMAKER: An Agent for Selecting Sources of Supply To Fill Orders. In *In Proceedings of the Agents'99 workshop on Agent-based Decision-Support for Managing the Internet-Enabled Supply Chain*, Seattle, Washington, May 1999.
- [8] Martin Frank, Alejandro Bugacov, Jinbo Chen, Gordon Dakin, Pedro Szekely, and Bob Neches. The Marbles Manifesto: A Definition and Comparison of Cooperative Negotiation Schemes for Distributed Resource Allocation. In *In Proceedings of the 2001 AAAI Fall Symposium on Negotiation Methods for Autonomous Cooperative Systems*, pages 36–45, 2001.
- [9] Juan Lopez and Pedro Szekely. Automatic Web Page Adaptation. In *Proceedings of the CHI-2001 Workshop Transforming the UI for anyone, anywhere*, Seattle, Washington, April 2001.
- [10] Juan Lopez and Pedro A Szekely. Web page adaptation for universal access. In Constantine Stephanidis, editor, *Universal Access In HCI: Towards an Information Society for All, Proceedings of HCI International '2001 (the 9th International Conference on Human-Computer Interaction), New Orleans, USA, August 5-10, 2001, Volume 3*, pages 690–694. Lawrence Erlbaum, 2001.
- [11] Martin R Frank, Pedro A Szekely, Robert Neches, Baoshi Yan, and Juan Lopez. WebScripter: World-Wide Grass-roots OntologyTranslation via Implicit End-User Alignment. In Martin Frank, Natasha F Noy, and Steffen Staab, editors, *Proceedings of the WWW2002 International Workshop on the Semantic Web, Hawaii, May 7, 2002*. CEUR-WS.org, 2002.

- [12] Jinbo Chen, Ro Bugacov, Pedro Szekely, Martin Frank, Min Cai, Donghan Kim, and Robert Neches. Coordinated Aggressive Bidding in Distributed. In *In Proceedings of the AAMAS 2003 Workshop on Representations and Approaches for Time-critical Decentralized Resource/Role/Task Allocation*, Melbourne , Australia, July 2003.
- [13] Craig A Knoblock, Pedro Szekely, and Rattapoom Tuchinda. A Mixed-Initiative System for Building Mixed-Initiative Systems. In *Proceedings of the AAAI Fall Symposium on Mixed-Initiative Problem-Solving Assistants*, 2005.
- [14] Pedro Szekely, Robert Neches, Marcel Becker, Stephen Fitzpatrick, Chris van Buskirk, Doug Fisher, and Gabor Karsai. Plan Execution and Coordination. In *Proceedings of ICAPS Workshop: Plan Execution: A Reality Check*, Monterey, California, June 2005.
- [15] Rajiv T Maheswaran, Craig Milo Rogers, Romeo Sanchez, Pedro A Szekely, and PoAn Chen. Distributed Scheduling for Multi-Agent Teamwork in Uncertain Domains: Criticality-Sensitive Coordination. In *In Proceedings of the AAMAS 2006 Workshop on Multiagent Sequential Decision Making*, Hakodate, Japan, May 2006.
- [16] Rajiv T Maheswaran, Craig Milo Rogers, Romeo Sanchez, Pedro A Szekely, and PoAn Chen. Scaling in Domains with Uncertainty: Criticality-Sensitive Coordination. In *In Proceedings of the AAMAS 2006 Workshop on Massively Multiagent Systems / Large-Scale Multiagent Systems*, Hakodate, Japan, May 2006.
- [17] Pedro Szekely, Rajiv Maheswaran, Robert Neches, Craig Rogers, Romeo Sanchez, Marcel Becker, Stephen Fitzpatrick, Gergely Gati, David Hanak, Gabor Karsai, and Chris van Buskirk. An Examination of Criticality-Sensitive Approaches to Coordination. In *In AAAI Spring Symposium on Distributed Plan and Schedule Management*, pages 136–142. AAAI Press, 2006.
- [18] Rajiv T Maheswaran, Craig M Rogers, Romeo Sanchez, and Pedro Szekely. Decision-Support for Real-Time Multi-Agent Coordination. In *Proceedings of the 9th International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS 2010 demonstration – Best Demonstration Award)*, Toronto, Canada, May 2010.
- [19] Rajiv T Maheswaran, Craig M Rogers, Romeo Sanchez, and Pedro Szekely. Enabling Flexible Human Strategic Guidance for Multi-Agent Planning and Scheduling in Dynamic Uncertain Domains. In *Proceedings of the ICAPS 2010 Workshop on Planning and Scheduling Under Uncertainty*, Toronto, Canada, May 2010.
- [20] Rajiv T Maheswaran, Craig M Rogers, Romeo Sanchez, and Pedro Szekely. Human-Agent Collaborative Optimization of Real-Time Distributed Dynamic Multi-Agent Coordination. In *Proceedings of the Third AAMAS 2010 International Workshop on Optimisation in Multi-Agent Systems*, Toronto, Canada, May 2010.
- [21] Rajiv T Maheswaran, Craig M Rogers, Romeo Sanchez, and Pedro Szekely. Human-Guided Real-Time Multi-Agent Coordination in Dynamic Uncertain Domains. In *Proceedings of the AAMAS 2010 Workshop on Agents in Real-time and Dynamic Environments*, Toronto, Canada, May 2010.
- [22] Rajiv T Maheswaran, Craig M Rogers, Romeo Sanchez, and Pedro Szekely. Real-Time Multi-Agent Planning and Scheduling in Dynamic Uncertain Domains. In *Proceedings of the 20th International Conference on Automated Planning and Scheduling (ICAPS 2010 demonstration)*, Toronto, Canada, May 2010.

- [23] Rajiv T Maheswaran, Craig M Rogers, Romeo Sanchez, and Pedro Szekely. Towards a General Framework for Human Guidance in Real-Time Multi-Agent Coordination. In *Proceedings of the AAMAS 2010 Workshop on Collaborative Human/AI Control for Interactive Experiences*, Toronto, Canada, May 2010.
- [24] Craig A Knoblock, Pedro Szekely, Jose Luis Ambite, Shubham Gupta, Aman Goel, Maria Muslea, Kristina Lerman, and Parag Mallick. Interactively Mapping Data Sources into the Semantic Web. In *Proceedings of the First International Workshop on Linked Science 2011 in Conjunction with the 10th International Semantic Web Conference*, Bonn, Germany, 2011.
- [25] Pedro Szekely, Craig A Knoblock, Shubham Gupta, Mohsen Taheriyani, and Bo Wu. Exploiting Semantics of Web Services for Geospatial Data Fusion. In *Proceedings of the SIGSPATIAL International Workshop on Spatial Semantics and Ontologies (SSO 2011)*, Chicago, IL, 2011.
- [26] Mohsen Taheriyani, Craig A Knoblock, Pedro Szekely, and Jose Luis Ambite. Semi-Automatically Modeling Web APIs to Create Linked APIs. In *Proceedings of the ESWC 2012 Workshop on Linked APIs*, 2012.
- [27] Bo Wu, Pedro Szekely, and Craig A Knoblock. Learning Data Transformation Rules through Examples: Preliminary Results. In *Ninth International Workshop on Information Integration on the Web (IIWeb 2012)*, 2012.
- [28] Andreas Harth, Craig Knoblock, Steffen Stadtmüller, Rudi Studer, and Pedro Szekely. On-the-fly integration of static and dynamic sources. In *Proceedings of the Fourth International Workshop on Consuming Linked Data (COLID2013)*, 2013.
- [29] Craig A Knoblock and Pedro Szekely. Semantics for big data integration and analysis. *2013 AAAI Fall Symposium Series*, 2013.
- [30] Craig A Knoblock, Pedro A Szekely, Shubham Gupta, Animesh Manglik, Ruben Verborgh, Fengyu Yang, and Rik Van de Walle. Publishing data from the smithsonian american art museum as linked open data. In *International Semantic Web Conference (Posters & Demos)*, pages 129–132, 2013.
- [31] Ying Zhang, Yao-Yi Chang, Pedro Szekely, and Craig A. Knoblock. A semantic approach to retrieving, linking, and integrating heterogeneous geospatial data. In *Proceedings of the 2013 IJCAI Workshop on Semantic Cities*, 2013.
- [32] Maria Maleshkova, Ruben Verborgh, Steffen Stadtmüller, and Pedro Szekely. Proceedings of the second workshop on services and applications over linked apis and data. 2014.
- [33] Bo Wu, Pedro Szekely, and Craig A Knoblock. Minimizing user effort in transforming data by example. In *Proceedings of the 19th international conference on Intelligent User Interfaces*, pages 317–322. ACM, 2014.

## Unrefereed Publications

- [1] Pedro Szekely. Separating the user interface from the functionality of application programs. *SIGCHI Bulletin*, 18(2), October 1986.
- [2] Pedro Szekely. Modular implementation of presentations. *SIGCHI Bull.*, 18(4):235–240, 1987.
- [3] Pedro Szekely. Using classification and separation to build intelligent interfaces. *SIGCHI Bull.*, 20(1):76–77, July 1988.
- [4] Pedro Szekely and Brad Myers. A user interface toolkit based on graphical objects and constraints. *ACM SIGPLAN Notices*, 23(11):36–45, 1988.
- [5] Angel Puerta and Pedro Szekely. Model-Based Interface Development. In *Tutorial Notes, ACM CHI'94 Conference on Human Factors in Computing Systems*, pages 389–390, 1994.
- [6] Pedro A Szekely, Christoph G Thomas, and Mark T Maybury. Editorial: IUI 99. *Knowl.-Based Syst.*, 12(8):401–402, 1999.
- [7] Charles Wiecha and Pedro Szekely. Transforming the UI for anyone. anywhere: enabling an increased variety of users, devices, and tasks through interface transformations. In *Proceedings of ACM CHI 2001 Conference on Human Factors in Computing Systems*, pages 483–484, 2001.
- [8] Craig A Knoblock, Jose Luis Ambite, Mark Carman, Matthew Michelson, Pedro Szekely, and Rattapoom Tuchinda. Beyond the Elves: Making Intelligent Agents Intelligent. *AI Magazine*, 29(2):33–42, 2008.
- [9] Craig A Knoblock, Pedro Szekely, Maria Muslea, and Shubham Gupta. Mapping Existing Data Sources into VIVO. August 2012.