

# Chris Culy, Ph.D.

chrisculy.net

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Citizenship: USA

## What I Do

*Data Visualization*  
*Strategic Thinking*

*NLP*

*UX Design Approaches*  
*Interdisciplinary collaboration*

## Recent work experience

### INDEPENDENT CONSULTANT

**2014-PRESENT**

Provide services for all aspects of the analysis and visualization of language-based information

- Word Formation Latin site ([wfl.marginalia.it](http://wfl.marginalia.it))
  - Designed and implemented full stack web site using MySQL, Python, Javascript
  - Designed innovative interactive visualizations for Latin morphology
  - Co-authored several conference papers
- AppBlit ([www.appblit.com](http://www.appblit.com))
  - Collaborate on algorithms and interactive design
  - Test prototypes
- Research on word embeddings ([chrisculy.net/lx/wordvectors/](http://chrisculy.net/lx/wordvectors/))
  - Demonstrated frequency effects in word embeddings
  - Used: Python: numpy, matplotlib, spacy, genism, etc.; R: ggplot2; Javascript: d3js
- Research on the language of letters ([visexplet.chrisculy.net](http://visexplet.chrisculy.net))
  - Create innovative interactive visualizations (Python, Javascript)
  - Co-authored 2 book chapters with Dr. Emma Moreton, University of Liverpool
- Photographs, Pistols & Parasols ([p3photographers.net](http://p3photographers.net))
  - Create and implement interfaces to SQL databases (Python, Javascript)
  - Create visualizations of time-based data
- Invited talks (selected)
  - Plenary presentation at Advanced Visual Methods for Linguistics. 2016. University of Queensland, Brisbane, Australia
  - AUVIS workshop “Information Visualization: Design and Techniques.” Fraunhofer Institute for Intelligent Analysis and Information Systems. 2015.

### VISITING FULL PROFESSOR

**2011-2014**

**Institute für Sprachwissenschaft, General and Computational Linguistics, Uni. Tübingen**

Conducted research and taught courses on natural language processing and data visualization

- Developed new research projects and tools in the visualization of linguistic information, coupled with applications using natural language processing
- Taught courses in natural language processing and data visualization (with UX), emphasizing both theory and concrete applications, using Java, Python, and Javascript

# Chris Culy, Ph.D.

**SR. RESEARCHER/LANGUAGE TECH. TECHNICAL OFFICER**      **2008-2011**  
**Institute for Specialised Communication and Multilingualism, European Academy (EURAC), Bolzano-Bozen**

Led information and language technology research and development

- Developed innovative open source interactive visualization tools for corpus queries
- Developed a visualization of the SDL/MultiTerm terminology database to show the domain ontology and monitor project progress

**SR. RESEARCH SCIENTIST AND PROJECT LEADER**      **2003-2005**  
**FX Palo Alto Laboratory, Inc.**

Led a multi-disciplinary research group

- Successfully integrated groups in natural language processing, information retrieval, ubiquitous computing, and computer-supported cooperative work into new group
- Formulated NLP policy for the entire parent company, Fuji Xerox
- Granted 3 joint patents related to text summarization and recommendation systems

**SR. RESEARCH LINGUIST**      **2000-2003**  
**SRI International**

Led and worked on multi-disciplinary teams on innovative projects

- Co-Principle Investigator with speech scientists on SRI's DARPA Babylon Speech to Speech Translation project, funded for US\$3,000,000 over 24 months
- Granted 2 joint patents related to human-machine dialog systems

## Patents

U.S. Patent 7,013,275: Method and apparatus for providing a dynamic speech-driven control and remote service access system. D. Arnold, H. Franco, D. Israel, and C. Culy.

U.S. Patent 7,249,019: Method and apparatus for providing an integrated speech recognition and natural language understanding for a dialog system. C. Culy, D. Israel, and J. Arnold.

U.S. Patent 7,363,294: Indexing for contextual revisitation and digest generation. D-A. Billsus, D.M. Hilbert, J.J. Trevor, C.D. Culy, L. Denoue, G. Golovchinsky.

U.S. Patent 7,610,190: Systems and methods for hybrid text summarization. L. Polanyi, M. H. van den Berg, G. L. Thione, R.S. Crouch, C.D. Culy, D.D. Ahn.

U.S. Patent 7,757,170: Recommendation aggregation for digest generation. D-A. Billsus, C.D. Culy, D.M. Hilbert, J.J. Trevor.

## Education

Ph.D. and A.M. in Linguistics, B.S. in Mathematics, Stanford University

## Programming skills

Java, JavaScript, Python, R      XML, HTML, CSS

## Research in Linguistics and Visualization

20+ journal articles or book chapters, 50+ conference papers, 10+ invited talks since 2012

## Languages

English: Native      French, German, Italian: C1