Chris Culy, Ph.D.
chrisculy.net

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What I Do

Data Visualization   *Data Analysis*   *NLP*
Strategic Thinking   *UX Design Approaches*   *Interdisciplinary collaboration*
https://blog.chrisculy.net/

Recent work experience

INDEPENDENT CONSULTANT   2014-PRESENT
Provide services for all aspects of the analysis and visualization of language-based information
- Research on word embeddings (http://chrisculy.net/lx/wordvectors/)
  - Demonstrated frequency effects in word embeddings
  - Used: Python: numpy, matplotlib, scikit-learn, spacy, gensym, etc.
    R: ggplot2, tidyverse; Javascript: d3js
- Word Formation Latin site (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)
  - Collaborate on algorithms and interactive design
  - Test prototypes
- Research on the language of letters (visexplet.chrisculy.net)
  - Create innovative interactive statistical visualizations   (Python, Javascript)
  - Co-authored 2 book chapters with Dr. Emma Moreton, University of Liverpool
- Photographs, Pistols & Parasols (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." Frauenhofer 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

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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: Professional proficiency