

Curriculum Vitae

Personal Data

Name Dipl.-Ing. Dr. techn. **Alexander Lex**,
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Born March 23, 1981
in Graz, Austria

Nationality Austrian



Professional

Aug.-Sept. 2011 **Center for Biomedical Informatics at Harvard Medical School**
Visiting Researcher

Since Aug. 2010 **Graz University of Technology**
Faculty Member and Lecturer (Universitätsassistent)

Since Aug. 2008 **Graz University of Technology**
Research Assistant

2005 **Boom Software AG** (Leibnitz, Austria)
Summer Intern; Software Development

2002 **Magna Steyr Fahrzeugtechnik AG & Co KG** (Graz, Austria)
Summer Intern; IT-Consulting, CAD Design

Since 2002 **Lex GesmbH** (Gratkorn, Austria)
Part Time; IT Administration

2000 Military Service

1999 **Raiffeisen Zentralbank** (New York, NY, USA)
Summer Intern; Office Functions

1998 **Hotel Espace Cite** (Carcassonne, France)
Summer Intern; Reception

1996-2002 **Lex GesmbH** (Gratkorn, Austria)
Part Time; Purchasing, Bidding, Metalworking

Education

Aug.-Sept. 2011 Visiting Researcher
Harvard Medical School
Supervision: Prof. Peter Park, Dr. Nils Gehlenborg

2008–2012 Doctoral Program in Computer Science
Graz University of Technology
Supervision: Univ. Prof. DI Dr. Dieter Schmalstieg
graduated with highest distinction

2006–2008 MS (“Dipl.-Ing.”), Graz University of Technology
Software Development and Business Management
graduated with highest distinction

2006–2007 Visiting Graduate Student
McMaster University, Hamilton, On, Canada

2002–2006 Bachelor’s Degree (“Bakk. rer. soc. oec”), Graz University of Technology
Software Engineering and Knowledge Management

2000–2002	Engineering school HTBLuVA Graz Gösting (BULME) graduated with highest distinction
1991–1999	High school and secondary school Bundesrealgymnasium Kepler, Graz graduated with distinction

Project Grants, Honors and Awards

2012	Project Grant: “Diagnostics of Tumor Heterogeneity - a new Steering Factor for Colorectal Cancer?” Funded by the state of Styria.
2011	Co-recipient of best paper award, IEEE InfoVis, 2011.
2011	Scholarship for short time academic research and expert courses abroad (KUWI). Granted by the Graz University of Technology.
2011	Project Grant: “CaleydoPLEX - Information Exploration in Teams”. Funded by the Austrian Science Fund (FWF), Grant no. P22902.
2010	Co-recipient of best student paper award, ACM Graphics Interface, 2010.
2009	Project Grant: “InGeneious - Visualization of biomolecular and clinical data”. Funded by the Austrian Research Promotion Agency (FFG), BRIDGE program, Grant no. 385567.
2007	Award for excellent performance as a student (“Leistungsstipendium”) granted by the Faculty of Computer Science, Graz University of Technology.
2007	Research grant for students (“Förderstipendium”) awarded by the Faculty of Computer Science, Graz University of Technology.
2006	Joint Study scholarship for student exchange with McMaster University, Hamilton, On, Canada.

Teaching Experience: Courses at Graz University of Technology

Since 2010	Selected Topics Computer Graphics Lectures on Perceptual Issues, Color, Information Visualization, Visual Analytics, Flow Visualization.
Since 2009	Distributed Systems Development and supervision of lab assignments.
Since 2010	Introduction to Scientific Work Supervision of focus groups.
Since 2011	Computer Graphics 1 Development and supervision of lab assignments.
Since 2011	Computer Graphics 2 Development and supervision of lab assignments.
Since 2008	Student Projects Supervision Supervised 16 student projects (bachelor’s and master’s projects).

Peer-reviewed Publications

1. **Alexander Lex**, Marc Streit, Hans-Jörg Schulz, Christian Partl, Dieter Schmalstieg, Peter J. Park and Nils Gehlenborg
StratomeX: Visual Analysis of Large-Scale Heterogeneous Genomics Data for Cancer Subtype Characterization
To appear in: Computer Graphics Forum (EuroVis ’12), pp. fff-lll, 31(3), June 2012
2. Clemens Holzhüter, **Alexander Lex**, Dieter Schmalstieg, Hans-Jörg Schulz, Heidrun Schumann and Marc Streit
Visualizing Uncertainty in Biological Expression Data
Proceedings of the SPIE Conference on Visualization and Data Analysis (VDA ’12), pp. 82940O, San Francisco, CA, USA, 2012.

3. **Alexander Lex**, Hans-Jörg Schulz, Marc Streit, Christian Partl and Dieter Schmalstieg
VisBricks: Multiform Visualization of Large, Inhomogeneous Data
IEEE Transactions on Visualization and Computer Graphics (InfoVis'11), pp. 2291-2300, 17(12), Dec. 2011.
4. Markus Steinberger, Manuela Waldner, Marc Streit, **Alexander Lex** and Dieter Schmalstieg
Context-Preserving Visual Links - **Best paper award**
IEEE Transactions on Visualization and Computer Graphics (InfoVis'11), pp. 2249-2258, 17(12), Dec. 2011.
5. Marc Streit, Hans-Jörg Schulz, **Alexander Lex**, Dieter Schmalstieg, Heidrun Schumann
Model-Driven Design for the Visual Analysis of Heterogeneous Data
To appear in: IEEE Transactions on Visualization and Computer Graphics, 2011.
6. Thomas Geymayer, **Alexander Lex**, Marc Streit, Dieter Schmalstieg
Visualizing the Effects of Logically Combined Filters
Proceedings of the Conference on Information Visualisation (IV'2011), pp. 47-52, London, UK, 2011.
7. **Alexander Lex**, Marc Streit, Christian Partl, Karl Kashofer, Dieter Schmalstieg
Comparative Analysis of Multidimensional, Quantitative Data
IEEE Transactions on Visualization and Computer Graphics (Proceedings Visualization / Information Visualization 2010), 16(6), pp. 1027-1035, Nov.-Dec. 2010
8. Manuela Waldner, Werner Puff, **Alexander Lex**, Marc Streit, Dieter Schmalstieg
Visual Links across Applications - **Best student paper award**
Proceedings of the Graphics Interface (GI) 2010, Ottawa, Ontario, Canada, May 31 - June 2 2010.
9. **Alexander Lex**, Marc Streit, Ernst Kruijff, Dieter Schmalstieg
Caleydo: Design and Evaluation of a Visual Analysis Framework for Gene Expression Data in its Biological Context
Proceedings of the IEEE Pacific Visualization Symposium, pp. 57-64, Taipei, Taiwan, March 2010.
10. Marc Streit, **Alexander Lex**, Michael Kalkusch, Kurt Zatloukal, Dieter Schmalstieg
Caleydo: Connecting Pathways with Gene Expression
Bioinformatics, Oxford Journals, 25(20), pp. 2760-2761, 2009.
11. Manuela Waldner, **Alexander Lex**, Marc Streit, Dieter Schmalstieg
Design Considerations for Collaborative Information Workspaces in Multi-Display Environments
Proceedings of the CoVIS 2009 Workshop on Collaborative Visualization on Interactive Surfaces (IEEE VisWeek), Atlantic City, USA, October 2009.
12. Heimo Müller, Robert Reihls, Stefan Sauer, Kurt Zatloukal, Marc Streit, **Alexander Lex**, Bernhard Schlegl, Dieter Schmalstieg
Connecting Genes with Diseases
Symposium on Information Visualization in Biomedical Informatics, 13th International Conference on Information Visualization, Barcelona, Spain, July 2009.
13. Marc Streit, **Alexander Lex**, Heimo Müller, Dieter Schmalstieg
Gaze-Based Focus Adaption in an Information Visualization System
Computer Graphics and Visualization and Image Processing 2009 Conference (CGVCVIP), Algarve, Portugal, June 2009.

Other Publications

- **Alexander Lex**, Peter J. Park and Nils Gehlenborg:
Supporting Subtype Characterization through Integrative Visualization of Cancer Genomics Data Sets
The Cancer Genome Atlas' 1st Annual Scientific Symposium: Enabling Cancer Research Through TCGA, November 17-18, 2011, Washington, D.C., USA
- Marc Streit, **Alexander Lex**, Helmut Doleisch, Dieter Schmalstieg:
Does software engineering pay off for research? Lessons learned from the Caleydo project
Poster at the Eurographics Workshop on Visual Computing for Biomedicine 2010, Leipzig, Germany, July 2010.

- *Gudrun Schmidt-Gann, Katharina Schmid, Monika Uehlein, Joachim Struck, Andreas Bergmann, Dieter Schmalstieg, Marc Streit, **Alexander Lex**, Douw G. van der Nest, Martijn van Griensven and Heinz Redl*
Gene- and Protein Expression Profiling in Liver in a Sepsis-Baboon Model
32nd Annual Meeting on Shock, San Antonio, Texas, USA June 6-9, 2009.

Thesis Papers

- **Doctoral Thesis:** Visualization of Multidimensional Data with Applications in Molecular Biology
Advisor: Univ. Prof. DI. Dr. Dieter Schmalstieg
Co-Advisor: Dr. Nils Gehlenborg
Referee: Prof. Dr. Robert Kosara
Publication date: March 2012
- **Master's Thesis:** Exploration of Gene Expression Data in a Visually Linked Environment
Supervision: Univ. Prof. DI. Dr. Dieter Schmalstieg
Publication date: June 2008
- **Bachelor's Thesis:** Evaluation of Medical Image Viewers and Architectural Software Design for a Medical Image Viewer
Supervision: Univ. Prof. DI. Dr. Horst Bischof, Dipl.-Ing. Dr.techn. Martin Urschler
Publication date: June 2005

Talks

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| 25.10.2011 | Paper presentation at IEEE InfoVis 2011 , Providence, Rhode Island, USA
VisBricks: Multiform Visualization of Large, Inhomogeneous Data. |
| 12.08.2011 | Invited talk at CBMI, Harvard Medical School , Boston, Massachusetts, USA
Visualizing Biomolecular Data with the Caleydo Framework. |
| 14.07.2011 | Paper presentation at Information Visualization 2011 , London, UK
Visualizing the Effects of Logically Combined Filters. |
| 28.10.2010 | Paper presentation at IEEE InfoVis 2010 , Salt Lake City, Utah, USA
Comparative Analysis of Multidimensional, Quantitative Data. |
| 21.09.2010 | Invited talk at the MRC Laboratory of Molecular Biology (LMB) , Cambridge, UK
Caleydo: Visual Analysis of Biomolecular Data. |
| 20.09.2010 | Invited talk at the European Bioinformatics Institute (EBI) , Cambridge, UK
Caleydo: Visual Analysis of Biomolecular Data. |
| 02.07.2010 | Invited talk at VCBM 2010 , Leipzig, Germany
Caleydo: Visual Analysis of Biomolecular Data. |
| 11.03.2010 | Invited talk at the VRVis Research Company , Vienna, Austria
Caleydo and Visual Links. |
| 03.03.2010 | Paper presentation at PacificVis 2010 , Taipei, Taiwan
Caleydo: Design and Evaluation of a Visual Analysis Framework for Gene Expression Data in its Biological Context. |
| 26.02.2009 | Invited talk at the AUVA Research Center for Traumatology , Vienna, Austria
Caleydo: Visualization of Gene Expression Data in the Context of Biological Processes. |
| 10.07.2008 | Invited talk at the Institute for Genomics and Bioinformatics , Graz University of Technology, Austria
Novel InfoVis Techniques Applied to Pathways and Gene Expression Data. |

Conference Functions

- Organizing committee member of IEEE Symposium on Biological Data Visualization (BioVis) 2012
- Program committee member of the International Conference on Information Visualisation (IV) 2010, 2011.

Reviewing for

- IEEE Information Visualization (InfoVis) 2010, 2011
- IEEE Visual Analytics (VAST) 2010, 2011
- EuroVis 2010, 2011, 2012
- IEEE PacificVis 2010, 2011
- IV 2009, 2010, 2011

Graz, April 10, 2012