

# BÁLINT MIKLÓS

<http://www.balintmiklos.com>

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## EDUCATION

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**11/2006 – 10/2010** PhD Student and Research Assistant

**ETH Zürich, Switzerland**

Invented a novel skeletal geometric shape representation, the scale axis transform. Proved mathematical properties in general high-dimensional setting, designed 2d and 3d computation algorithms and provided practical, robust implementations.

**10/2009 – 11/2009** Visiting Researcher

**Stanford University, USA**

Work in the Geometric Computing Group headed by Prof. Leonidas Guibas

**10/2003 – 09/2006** Master of Sciences in Computer Science,

**ETH Zürich, Switzerland**

Grade Point Average 5.68 (maximum grade 6.00)

**10/2000 – 10/2003** Computer Science student

**Technical University of Cluj Napoca, Romania**

Grade Point Average 9.57 (maximum grade 10.00)

## WORK EXPERIENCE

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**02/2011 – date** Software engineer at **Google, Zürich, Switzerland**

**10/2005 – 01/2006** Software developer intern at **Autoform, Zürich, Switzerland**

- Estimation of curvature values and directions on triangle meshes.
- Design and implementation of a curvature-adaptive surface remeshing algorithm.

**01/2004 – 09/2005** Part-time software developer at **Infowing, Erlenbach, Switzerland**

- Leader of the “ireen” project, a platform for customized mobile content web delivery based on mobile client capabilities. It was used several years in production even after I left the company, for clients like Coca-Cola Switzerland, Swisscom, etc.
- Designed and implemented “mms-to-screen”, an application for broadcasting mms messages to public screens. Used at summer festival concert events, swiss national football games etc.

## RESEARCH ACTIVITIES

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### Invited Talks and Short Research Visits:

- Berkeley University, host Prof. J. Shewchuk, USA, (November 2009)
- University of California at Davis, host Prof. N. Amenta USA (November 2009)
- Jena University, host Prof. J. Giesen, Germany (July 2008 and September 2009)
- Max-Planck Institut für Informatik, host Prof. J Giesen, Germany (November 2007)
- Stanford University, host Prof. L. Guibas, USA (Aug 2007)

### Peer Reviewer for Conferences:

SoCG 2007, 2008, 2009; Eurographics 2009; SIGGRAPH 2009

## WORKSHOPS AND TRAINING

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- **Startup School**, Y Combinator, Berkeley, USA (October 2009)
- Computational Geometry and Graphs Summer School, JAIST Kanazawa, Japan (July 2009)
- Horizon Business Technology Office Seminar, **McKinsey & Co**, Italy (May 2006)
- **Cisco** Certified Network Associate course, Cluj-Napoca, Romania (2002-2003)

## PUBLICATIONS

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1. Balint Miklos, Joachim Giesen, Mark Pauly: *Discrete Scale Axis Representations for 3D Geometry*. ACM Transactions on Graphics, SIGGRAPH 2010, to appear.
2. Joachim Giesen, Balint Miklos, Mark Pauly: *The Medial Axis of the Union of Inner Voronoi Balls in the Plane*. Accepted to Computational Geometry: Theory and Applications, CGTA in press.
3. Joachim Giesen, Balint Miklos, Mark Pauly, Camille Wormser: *The Scale Axis Transform*. ACM Symposium on Computational Geometry, SoCG 2009.
4. Joachim Giesen, Balint Miklos, Mark Pauly, Camille Wormser: *The Scale Axis Picture Show*. ACM Symposium on Computational Geometry, Multimedia Session SoCG 2009.
5. Joachim Giesen, Balint Miklos, Mark Pauly: *Medial Axis Approximation of Planar Shapes from Union of Balls: A Simpler and more Robust Algorithm*. The 19th Canadian Conference on Computational Geometry, CCCG 2007. Extended version invited to CGTA, see above.
6. Balint Miklos, Joachim Giesen, Mark Pauly: *Medial Axis Approximation from Inner Voronoi Balls: A Demo of the Mesecina Tool*. ACM Symposium on Computational Geometry Multimedia Session, SoCG 2007.
7. Balint Miklos: *Delaunay Refinement for Finite Element Mesh Generation*. Proceedings of "Interdisciplinarity in Engineering" Conference, Targu-Mures, Romania, 2003.

## SOFTWARE

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Mesecina – computational geometry you can see. An interactive tool to visualize and study the medial axis and related structures. <http://www.balintmiklos/mesecina/>

## AWARDS

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- Two-times **1st prize** winner at Hungarian Technical Student Conference in 2003 and 2004
- **1st prize** at "Traian Lalescu" Numerical Calculus Competition, Cluj-Napoca, Romania
- Romanian state Merit and Study Fellowship for three consecutive years, 2000-2003
- Two-times "Apáczai Fellowship" awarded by Hungarian Ministry of Education, 2000-2002

## INTERESTS

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Former competitive level international **figure skater** for more than 15 years. Four-time Romanian junior figure skating champion, senior national vice-champion in 1999. Represented Romania at the World Junior Championships and at Junior Grad Prix events in 1997-2001. Medal prizes at several inter-club European competitions in the same period.

## SKILLS

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**Languages:** English, German, Romanian, Hungarian

**Programming:** C/C++, QT, OpenGL, CGAL, Java, C#, Modula-2; *beginner:* Ruby, Python

**Development environments:** Visual Studio/Windows, XCode/Mac OS, KDevelop/Linux, Eclipse

## REFERENCES

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**Prof. Mark Pauly**

Ecole Polytechnique Fédérale de Lausanne, Switzerland, [mark.pauly@epfl.ch](mailto:mark.pauly@epfl.ch)

**Prof. Leonidas Guibas**

Stanford University, USA, [guibas@cs.stanford.edu](mailto:guibas@cs.stanford.edu)

**Prof. Joachim Giesen**

Jena University, Germany, [joachim.giesen@uni-jena.de](mailto:joachim.giesen@uni-jena.de)