Alexandre Chapiro

I am interested in image and video processing. In particular: computational capture and display, stereo 3D, HDR, applied perception, user experience, virtual reality.

Professional Experience

2016-now **Dolby Laboratories, Sunnyvale**

research intern — Conducts research and obtain experimental results on human perception factors relevant to business needs

affiliation — Applied Vision Science group, managed by Robin Atkins

2011-2016 **Disney Research, Zurich**

researcher — Conducted research on novel displays, stereo 3D, high dynamic range, high framerate and human perception resulting in four patent applications and several publications

affiliation — Stereo and Displays group, managed by Aljoša Smolić

Education

2011-2015 **PhD in Computer Science**

institution — Federal Institute of Technology Zurich (ETHZ), Zurich, Switzerland

thesis title — *Perceptual Enhancements for Novel Displays*

affiliation — Computer Graphics Laboratory

supervisors — Prof. Markus Gross. Co-Advisor: Dr. Aljoša Smolić

2010-2011 **Masters' Degree in Applied Mathematics**

institution — Institute of Pure and Applied Mathematics (IMPA), Rio de Janeiro, Brazil

thesis title — *Improving Mobile Video*

affiliation — Visgraf laboratory

supervisors — Prof. Paulo Cezar Pinto Carvalho. Co-Advisor: Prof. Luiz Velho

2007–2009 **Undergraduate Degree in Mathematics**

institution — Federal University of Juiz de Fora (UFJF), Juiz de Fora, Brazil

thesis title — *An Introduction to Degree Theory*

affiliation — Computer Graphics Laboratory

supervisors — Prof. Luiz Faria, Marcelo Bernardes Vieira

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alexandre-chapiro-a8342520

Teaching

Feb.2014 to Jun.2014 **Teaching assistant**, *Math. Foundations of Computer Graphics and Vision*, ETHZ.
Graduate class teaching mathematical techniques in visual computing

Feb.2015 to Jun.2015 **Teaching assistant**, *Math. Foundations of Computer Graphics and Vision*, ETHZ.

Feb.2012 to Jun.2012 **Teaching assistant**, *Informatik 1*, ETHZ.
Undergradute class teaching fundaments of informatics to engineering students

Feb.2013 to Jun.2013 **Teaching assistant**, *Informatik 1*, ETHZ.

Academic Honors

2015 Second youngest PhD to ever graduate from the Computer Science department at ETH Zurich at 25

2011 Finished 2-year Master's program at the National Institute of Pure and Applied Mathematics in 18 months

2009 Finished 4-year undergraduate program at the Federal University of Juiz de Fora in Mathematics in 3 years with the highest GPA in the graduating class

2007 Ranked 1st in admission examinations, Federal University of Juiz de Fora

2006 Gold Medalist, Brazilian Astronomy Olympiad

2006 Gold Medalist, Brazilian Mathematics Olympiad for Public School Students. 95th place among approximately 5.3 million students

2005 Gold Medalist, Brazilian Mathematics Olympiad for Public School Students. 9th place among approximately 3.8 million students

Awards and Funding

Oct.2011 to Oct.2013 **Participant**, *European Commission Program FP7*.

Mar.2010 to Jul.2011 **Awarded**, *Master program fellowship, CNPq*.

Jan.2009 to Dec.2009 **Awarded**, *Undergraduate research scholarship, FAPEMIG*.

Jan.2008 to Dec.2008 **Awarded**, *Undergraduate research scholarship, CNPq*.

Mar.2007 to Jan.2008 **Awarded**, *Scholarship for winners OBMEP 2006 mathematics olympics, CNPq*.

Mar.2006 to Jan.2007 **Awarded**, *Scholarship for winners OBMEP 2005 mathematics olympics, CNPq*.

Jan.2005 to Dec.2005 **Awarded**, *High-school research scholarship, CNPq*.

- Obs.: CNPq is the Brazilian national funding agency. FAPEMIG is the funding agency for the state of Minas Gerais, Brazil

Academic Reviewing

conferences: **2016**, *SIGGRAPH Asia, Graphics Interface*.
2015, *SIGGRAPH, SIGGRAPH Asia, ICIP*.
2014, *Pacific Graphics*.
2012, *3DV*.

journals: **2016**, *IEEE TIP*.
2015, *IEEE CG&A, IEEE TVCG*.
2014, *CG Forum*.

Invited Talks and Presentations

invited talk: **Perceptual Enhancements for Novel Displays**.
Dolby Laboratories 2016

invited talk: **Perceptual Enhancements for Novel Displays**.
Technicolor 2015

invited talk: **Perceptual Enhancements for 3D Displays**.
Max Planck Institut 2015

paper talk: **Stereo from Shading**.
EGSR 2015

paper talk: **Perceptual Evaluation of Cardboarding in 3D Content Visualization**.
SAP 2015

paper talk: **Optimizing Stereo-to-Multiview Conv. for Autostereo. Displays**.
Eurographics 2015

Languages

Portuguese	Fluent	*Native speaker*
Russian	Fluent	*Native speaker*
English	Fluent	*TOEFL iBT 117/120, Cambridge FCE and CAE exams with A grades*
Spanish	Fluent	*3 years of school in Spain*
French	Advanced	*Alliance Française DELF diplome - 2005*
German	Beginner	*Approximately A2 level*

References

Prof. Dr. Markus Gross,
Director of Disney Research Zurich. Full Professor, ETH Zurich.

Prof. Dr. Aljoša Smolić,
SFI Research Professor of Creative Technologies, Trinity College Dublin.

Dr. Tunç Aydın,
Research Scientist, Disney Research Zurich.

Prof. Dr. Paulo Cezar Pinto Carvalho,
Full Professor, IMPA, Rio de Janeiro, Brazil (retired).

Publications

*Obs.: * Patent application in progress.*

Papers

Unfolding the 8-bit Era,
European Conference on Visual Media Production 2015,
Zund, F., Berard, P., Chapiro, A., Schmid, S., Ryffel, A., Bermano, A., Gross, M., Sumner, R.

Art-Directable Continuous Dynamic Range Video*,
Compters & Graphics, Elsevier, 2015,
Chapiro, A., Aydin, T., Stefanoski, N., Croci, S., Smolic, A., Gross, M.

Video Content and Structure Description Based on Keyframes, Clusters and Storyboards*,
IEEE International Workshop on Multimedia Signal Processing, Xiamen-China, 2015,
Junyent, M., Beltran, P., Farre, M., Pont-Tuset, J., Chapiro, A., Smolic, A.

Stereo from Shading,
Eurographics Symposium on Rendering, Darmstadt-Germany, 2015. (E&I track),
Chapiro, A., O'Sullivan, C., Jarosz, W., Gross, M., Smolic, A.

Perceptual Evaluation of Cardboarding in 3D Content Visualization,
ACM Symposium on Applied Perception, Vancouver-Canada, 2014. (Short paper),
Chapiro, A., Diamanti, O., Poulakos, S., O'Sullivan, C., Smolic, A., Gross, M.

Optimizing Stereo-to-Multiview Conversion for Autostereoscopic Displays*,
Eurographics, Strasbourg-France, 2014,
Chapiro, A., Heinzle, S., Aydin, T., Poulakos, S., Zwicker, M., Smolic, A., Gross, M.

Towards Mobile HDR Video,
Eurographics, Llandudno-UK, 2011. (Extended abstract)
Castro, T.K., Chapiro, A., Cicconet, M., Velho, L.

Detection of High Frequency Regions in Multiresolution,
International Conference on Image Processing, Cairo-Egypt, 2009.
Mota, V.F., Perez, E.A., Castro, T.K., Chapiro, A., Vieira, M.B.

High Frequency Assessment from Multiresolution Analysis,
International Conference on Computational Science, Baton Rouge-USA, 2009
Castro, T.K. , Perez, E. A. , Mota, V. F. , Chapiro, A. , Vieira, M. B. , Freire, W. P.

Book Chapters

Discrete Wavelets on Edges,
InTech open publisher, 2011
Chapiro, A. , Knop, T., Mota, V., Perez, E., Bernardes, M., Freire W. P.

Posters

The Influence of Visual Salience on Video Consumption Behavior
A Survival Analysis Approach*,
ACM Web Science, Oxford-United Kingdom, 2015
Huber, R., Scheibehenne, B., Chapiro, A., Frey, S., Sumner, R.

Filter Based Deghosting for Exposure Fusion Video,
SIGGRAPH, Vancouver-Canada, 2011. *Student Research Competition Semi-Finalist*
Chapiro, A., Cicconet, M., Velho, L.

Towards Mobile HDR Video,
International Conference on Computational Photography, Pittsburg-USA, 2011
Castro, T.K., Chapiro, A., Cicconet, M., Velho, L.

Mountain's Pass Theorem,
Minas-Gerais Meeting of Partial Diferential Equations, Itajuba-Brazil, 2009
Chapiro, A., Pereira, F.

Other

Image Domain Warping for Advanced 3D Video Applications,
IEEE COMSOC MMTC E - Letter, 2014. (Invited letter)
Smolic A., Wang, O., Lang, M., Stefanoski, N., Farre, M., Greisen, P., Heinzle, S., Schaffner, M.,Chapiro, A., Sorkine-Hornung, A., Gross, M.

Computational Photography,
IMPA, Rio de Janeiro-Brazil, 2011. (Technical report)
Castro, T.K., Chapiro, A., Velho, L.