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Anton Treskunov, PhD in Computer Science

Education

1993 **Keldysh Institute for Applied Math of Russian Academy of Sciences**
PhD, Robot Vision
Moscow, Russia

Research Experience

Oct 2009 – Jul 2015 **Research Engineer**
Samsung Research America, User Experience Center
Mountain View, California, United States

Research new ways of interaction with TVs as well as HCI in general.
Prototype novel input mechanisms and Smart TV User Interfaces in close
cooperation with designers and user researchers. Submit patent applications.
Do a Virtual Reality research.

Aug 2003 – Jun 2009 **Research Scientist**
University of Southern California, Institute for Creative Technologies
Marina del Rey, California, United States

Virtual Reality research and software development; Flatworld and Virtual
Iraq projects; work on smart projectors.

Awards & Grants

Feb 2013 Award: Outstanding Achievement Award from Samsung Research America for
contribution to 2013 Samsung TV Smart Remote Control

Jun 2008 Award: Best Medical Application award at the 10th Virtual Reality
International Conference, Laval, France for virtual reality exposure therapy
treatment for PTSD

Nov 2004 Award: Best Paper award, 24th Army Science Conference

Skills & Activities

Skills Virtual Reality, Augmented Reality, Computer Graphics, Visualization, Computer Vision, Haptics, Robot Vision, Virtual Environments, User Experience, Human-Computer Interaction, Software Engineering, Rapid Prototyping, Virtual Reality Applications, 3D, Usability, Human Machine Interaction, HCI/CHI Input Devices - Controllers, Interaction, Multimodal Interaction, Prototyping, Wearable Computing, Creativity and Innovation

Languages English, Russian

Publication Highlights

Anton Treskunov, Jarrell Pair: *PROJECTOR-CAMERA SYSTEMS FOR IMMERSIVE TRAINING*. 25th Army Science Conference, Orlando, FL; 11/2006

Andrei Sherstyuk, Anton Treskunov Samsung, Marina Gavrilova: *Predator-Prey Vision Metaphor for Multi-Tasking Virtual Environments*. IEEE Symposium on 3D User Interfaces (3DUI'12), Costa Mesa, CA; 03/2012

Anton Treskunov, Seung Wook Kim, Stefan Marti: *Range Camera for Simple behind Display Interaction*. MVA 2011 IAPR Conference on Machine Vision Applications, Nara, Japan; 06/2011

Shih-Ching Yeh, Brad Newman, Matt Liewer, Jarrell Pair, Anton Treskunov, Greg Reger, Barbara O. Rothbaum, JoAnn Difede, Josh Spitalnick, Rob McLay, Thomas D. Parsons, Albert A. Rizzo: *A Virtual Iraq System for the Treatment of Combat-Related Posttraumatic Stress Disorder*. IEEE Virtual Reality Conference 2009 (VR 2009), Lafayette, Louisiana, USA; 03/2009

S.M. Sokolov, A.S. Treskunov: *Automatic vision system for final test of liquid crystal displays*. 1992 IEEE International Conference on Robotics and Automation, Barcelona, Spain; 06/1992

Book Chapters

Andrei Sherstyuk, Dale Vincent, Benjamin Berg, Anton Treskunov: *Mixed Reality Manikins for Medical Education*. Handbook of Augmented Reality, Edited by Borko Furht, 12/2010: chapter 23: pages 479-500; Springer., ISBN: 978-1-4614-0063-9

Journal Publications

Andrei Sherstyuk, Caroline Jay, Anton Treskunov: *Impact of Hand-Assisted Viewing on User Performance and Learning Patterns in Virtual Environments*. The Visual Computer 03/2011; 27(3):173-185. DOI:10.1007/s00371-010-0516-0

Andrei Sherstyuk, Anton Treskunov, Benjamin Berg: *Semi-Automatic Surface Scanner for Medical Tangible User Interfaces*. International Journal of Image and Graphics 04/2010; 10(2):219-233. DOI:10.1142/S0219467810003743

Andrei Sherstyuk, Dale Vincent, Anton Treskunov: *Toward Natural Selection in Virtual Reality*. IEEE engineering in medicine and biology magazine: the quarterly magazine of the Engineering in Medicine & Biology Society 03/2010; 30(2):93-7. DOI:10.1109/MCG.2010.34

Patents

Yuchang Hu, Anton Treskunov: *Content delivery system with content sharing mechanism and method of operation thereof*. US Patent US9591346 B2, 2017

Anton Treskunov, Seung Wook Kim, Stefan Marti: *Dynamic text input using on and above surface sensing of hands and fingers*. US Patent US9430145 B2, 2016

Yuchang Hu, Anton Treskunov: *Control system with ridge interface and method of operation thereof*. US Patent US9323334 B2, 2016

Rongrong Wang, Anton Treskunov: *Electronic system with gesture processing mechanism and method of operation thereof*. US Patent US9811165, 2017

Rongrong Wang, Anton Treskunov: *Electronic system with gesture calibration mechanism and method of operation thereof*. US Patent App. 14/586,142

Anton Treskunov, Yuchang Hu: *Display system with concurrent multi-mode control mechanism and method of operation thereof*. US Patent US10175874, 2019

Anton Treskunov, Yuchang Hu, Susan Choi: *User Interface Navigation*. US Patent US1012054, 2018

Conference Proceedings

Anton Treskunov, Mike Darnell, Rongrong Wang: *Active Haptic Feedback for Touch Enabled TV Remote*. to appear at 17th ACM International Conference on Multimodal Interaction, ACM ICMI '2015, Seattle, WA; 11/2015

Andrei Sherstyuk, Anton Treskunov: *Space-Time Maps for Virtual Environments*. ICAT-EGVE 2014 - International Conference on Artificial Reality and Telexistence and Eurographics Symposium on Virtual Environments, Bremen, Germany; 12/2014

Andrei Sherstyuk, Anton Treskunov, Vladimir Savchenko: *Video-Based Head Tracking for High-Performance Games*. IAPR Machine Vision Applications (MVA 2013), Kyoto, Japan; 05/2013

A. Sherstyuk, A. Treskunov: *Natural head motion for 3D social games*. Virtual Reality (VR), 2013 IEEE, Lake Buena Vista, FL; 03/2013

Andrei Sherstyuk, Anton Treskunov: *Head tracking for 3D games: Technology evaluation using CryENGINE2 and faceAPI*. Virtual Reality (VR), 2013 IEEE, Lake Buena Vista, FL; 03/2013

Andrei Sherstyuk, Anton Treskunov Samsung, Marina Gavrilova: *Predator-Prey Vision Metaphor for Multi-Tasking Virtual Environments*. IEEE Symposium on 3D User Interfaces (3DUI'12), Costa Mesa, CA; 03/2012

Anton Treskunov, Seung Wook Kim, Stefan Marti: *Range Camera for Simple behind Display Interaction*. MVA 2011 IAPR Conference on Machine Vision Applications, Nara, Japan; 06/2011

Seung Wook Kim, Anton Treskunov, Stefan Marti: *DRIVE: Directly Reaching Into Virtual Environment with bare hand manipulation behind mobile display..* IEEE Symposium on 3D User Interfaces, 3DUI 2011, Singapore; 03/2011

Andrei Sherstyuk, Dale Vincent, Anton Treskunov: *Towards Virtual Reality games..* 8th International Conference on Virtual Reality Continuum and its Applications in Industry, VRCAI 2009, Yokohama, Japan; 12/2009

Andrei Sherstyuk, Anton Treskunov: *Collision-free travel with terrain maps*. Proceedings of the 8th International Conference on Virtual Reality Continuum and its Applications in Industry, VRCAI 2009, Yokohama, Japan; 12/2009

Andrei Sherstyuk, Anton Treskunov: *Dynamic light amplification for immersive environment rendering*. 8th International Conference on Virtual Reality Continuum and its Applications in Industry, VRCAI 2009, Yokohama, Japan; 12/2009

Andrei Sherstyuk, Anton Treskunov: *Dynamic light amplification for head mounted displays..* Proceedings of the ACM Symposium on Virtual Reality Software and Technology, VRST 2009, Kyoto, Japan; 10/2009

Shih-Ching Yeh, Brad Newman, Matt Liewer, Jarrell Pair, Anton Treskunov, Greg Reger, Barbara O. Rothbaum, JoAnn Difede, Josh Spitalnick, Rob McLay, Thomas D. Parsons, Albert A. Rizzo: *A Virtual Iraq System for the Treatment of Combat-Related Posttraumatic Stress Disorder..* IEEE Virtual Reality Conference 2009 (VR 2009), Lafayette, Louisiana, USA; 03/2009

Andrei Sherstyuk, Kin Lik Wang, Anton Treskunov, Jarrell Pair: *Real binoculars with virtual functions for mixed environments..* International Conference on Advances in Computer Entertainment Technology, ACE 2008, Yokohama, Japan; 12/2008

Andrei Sherstyuk, Anton Treskunov, Benjamin Berg: *Fast geometry acquisition for mixed reality applications using motion tracking..* 7th IEEE and ACM International Symposium on Mixed and Augmented Reality, ISMAR 2008, Cambridge, UK; 09/2008

Andrei Sherstyuk, Kin Lik Wang, Anton Treskunov: *View Enhancement Techniques for Scene Exploration and Object Selection in Virtual and Mixed Environments*. 4th International Workshop on the Tangible Space Initiative, Nara, Japan; 11/2007

Andrei Sherstyuk, Jarrell Pair, Anton Treskunov: *Optical Sight Metaphor for Virtual Environments*. IEEE Symposium on 3D User Interfaces (3DUI), Charlotte, NC; 03/2007

Anton Treskunov, Jarrell Pair: *PROJECTOR-CAMERA SYSTEMS FOR IMMERSIVE TRAINING*. 25th Army Science Conference, Orlando, FL; 11/2006

- A A Rizzo, K Graap, J Pair, G Reger, A Treskunov, T.D. Parsons: *User-Centered Design Driven Development of a VR Therapy Application for Iraq War Combat-Related Post Traumatic Stress Disorder*. 2006 International Conference on Disability, Virtual Reality and Associated Technology, Esbjerg, Denmark; 09/2006
- Jarrell Pair, Brian Allen, Matthieu Dautricourt, Anton Treskunov, Matt Liewer, Ken Graap, Greg Reger: *A Virtual Reality Exposure Therapy Application for Iraq War Post Traumatic Stress Disorder*. IEEE Virtual Reality Conference, 2006, Washington, DC; 03/2006
- Jarrell Pair, Anton Treskunov, Diane Piepol: *Leveraging Hollywood Set Design Techniques to Enhance Ad Hoc Immersive Display Systems*. IEEE VR 2005 Workshop on Emerging Display Technologies, Bonn; 03/2005
- Anton Treskunov, Jarrell Pair, Bill Swartout: *The Flatworld Simulation Control Architecture (FSCA): A Framework for Scalable Immersive Visualization Systems*. 24th US Army Science Conference, Orlando, FL; 11/2004
- S.M. Sokolov, A.S. Treskunov: *Automatic vision system for final test of liquid crystal displays*. 1992 IEEE International Conference on Robotics and Automation, Barcelona, Spain; 06/1992