

Anton Treskunov

OBJECTIVE

Senior Research and Development position in Computer Graphics, Computer Vision, Robotics.

WORK EXPERIENCE

Computer Scientist / Lead Programmer **2003-2009**

Mixed Reality group, Institute for Creative Technologies (ICT), USC, Marina del Rey, CA

University affiliated research center:

As a Computer Scientist I published 10 papers, mostly at peer reviewed IEEE/ACM conferences; one of them got Best Paper award. Areas of recent interest: Smart Projectors, Vision Based Tracking, Virtual Reality User Interface.

As a Lead Programmer I authored a software architecture for distributed projection based Virtual Reality system (FSCA, Flatworld project); implemented core parts: network message exchange, input devices, stereo rendering, integration with rendering engines (OGRE, Gamebryo); supervised project development team, teaching and helping fellow programmers and graduate students. Flatworld technical demo served as a prototype for several army training installations, now in use. The FSCA software was used also for post-traumatic stress disorder treatment Virtual Iraq project, widely used now at dozen of medical facilities across the country.

Also proposed an integration of life size virtual character rendering on semi transparent screen with ICT natural language research, which led to highly successful Sgt. Blackwell project.

Other projects: Projection Field concept aimed at real-time reconfiguration of projection based VR stage; Be A Photojournalist (working with digital photo cameras, XML, XSLT); real-time rendering of Parthenon illumination model.

Flatworld, Virtual Iraq, Sgt. Blakwell projects received wide attention from army, congress and national media, helping to secure the institute funding.

Lead Programmer **1999-2002**

Phantom Reality, Durham, NC

Multimedia Software Consulting company:

As a lead programmer, I was personally responsible for software development in most projects the company has been involved, i.e. composing requirements and technical design; developing algorithms, implementing code; finishing and troubleshooting of projects performed by others developers; communicating with clients.

Selected projects: Tulip Player – ActiveX control for real-time 3D rendering and audio streaming; Phantom Direct -- ActiveX wrapper around DirectX for use with Visual Basic; OutThere – Role Playing Interactive 3D Environment programmable via Finite State Machine interface; Panorama – the system for Internet client-server walk through an environment obtained using 3D scanner/camera; Vision Aerobics – eye exercise software, Tulip Communicator – Internet content delivery with seamless interruptible background download (Windows tray based, ported to OSX).

Senior Software Engineer **1993-1999**

IMSI (Inset Systems, Quarterdeck), Moscow, Russia

Hijaak (Windows Graphics File Format Conversion):

Supervised format modules development; implemented PS, AI, 3DS, PSD, EMF and other format modules; developed Polylines to Bezier generalization code for Raster-to-Vector conversion engine; lead design of open, component based graphics conversion engine.

EDUCATION

PhD in Computer Science (Robot Vision) **1986-1993**

Keldysh Institute for Applied Math, Moscow, Russia

Dissertation: Algorithms and Software for Automatic Visual Inspection Systems. Results were published as 3 book chapters, paper in IEEE conference, several conference posters and the institute preprints.

MS in Theoretical Mechanics and Applied Mathematics **1981-1986**

M.V. Lomonosov Moscow State University, Moscow, Russia

SUMMARY

Educated in Math and CS (PhD); worked in industry (cg and multimedia, shrinkware and consulting) and in academia (robot vision and virtual/mixed reality); expertise in problem solving, algorithms and efficient software; seeking senior R&D position in Computer Graphics, Computer Vision, Robotics.

PROGRAMMING SKILLS & QUALIFICATIONS

Experience in complete cycle of market application development: from requirements through design, development to shipping and support. Image Processing, Color Management, Robot Vision. 2D & 3D CG algorithms.

System building experience

FSCA – Flatworld Simulation Controller Architecture; **Be A Reporter** – C++/HTML/CSS/XSLT multi-computer software for a Newzeum project; **Tilip Communicator** – Windows software for a seamless content delivery; A software for distributed multi-platform **robot vision system** to sort out LCD during a final inspection.

SDK building experience

NetMessage – robust network message exchange; PhantomDirect – DirectX for VisualBasic; Hijaak open conversion architecture.

Programming languages

C++ (expert level with 10+ years of experience), Python, Lua, C, Objective C, C#, OCAML, HTML, PHP, CSS, XSLT.

Operating Systems

MS Windows, MAC OSX; Cross-platform software development experience.

Libraries, Engines, Toolkits

Boost; ACE; Gamebryo; OGRE; DirectX; DirectShow; OpenCV, R, Matlab, CUDA.

PROFESSIONAL AWARD

Best Paper Award, 24th Army Science Conference, Orlando, 2004.

SELECTED PUBLICATIONS

Semiautomatic Surface Scanner for Medical Tangible User Interfaces. (with Andrei Sherstyuk and Benjamin Berg). In: *International Journal of Image and Graphics* (in print).

A Virtual Iraq System for the Treatment of Combat-related Post-Traumatic Stress Disorder. (with Shih-Ching Yeh, Brad Newman, Matt Liewer, Jarrell Pair, Greg Reger, Barbara O. Rothbaum, JoAnn Difede, Josh Spitalnick, Rob McLay, Thomas D. Parsons and Albert A. Rizzo) In: *Proceedings of IEEE Virtual Reality Conference 2009 (VR 2009)*. Lafayette, LA. 2009

Real Binoculars with Virtual Functions for Mixed Environments. (with Andrei Sherstyuk, Kin LikWang and Jarrell Pair) In: *ACE '08: Proceedings of the 2008 International Conference on Advances in Computer Entertainment Technology*. Yokohama, Japan. 2008

Projector-Camera Systems for Immersive Training. (with Jarrell Pair) In: *Proceedings of the 26th Army Science Conference*. Orlando, FL. 2006

The Flatworld Simulation Control Architecture (FSCA): A Framework for Scalable Immersive Visualization Systems. (with Jarrell Pair and Bill Swartout) In: *Proceedings of the 25th Army Science Conference*. Orlando, FL [**Best Paper Award**]. 2004

Automatic Vision System for Final Test of Liquid Crystal Displays. (with Sergey Sokolov) In: *IEEE International Conference on Robotics and Automation*. Nice, France. 1992

OTHER PROFESSIONAL ACTIVITY

Reviewer / member of program committee for ISMAR (ACM / IEEE International Symposium on Mixed and Augmented Reality) 2008-2009.

PERSONAL

Legal status in US: citizen.

Hobbies: photography, travel, books, soccer, cycling, badminton.

REFERENCES

Available upon request