NICU D. CORNEA

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Summary: Ph.D. student in Electrical and Computer Engineering seeking a challenging research or software development position. Research expertise includes: scientific and medical visualization, computer graphics, and computer vision.

Education:

Rutgers University, New Brunswick, NJ

Ph.D. candidate, Electrical and Computer Engineering, expected graduation: Jan, 2007
Thesis topic: Curve-skeletons of 3D objects: algorithms and applications. GPA: 3.9 out of 4.0

M.S., Electrical and Computer Engineering, Oct, 2005
Thesis topic: A visualization tool for fMRI data mining. GPA: 3.9 out of 4.0

Technical University, Cluj-Napoca, Romania

B.S., Computer Engineering, Jun, 2001

Professional Experience:

Rutgers University, New Brunswick, NJ

Graduate Assistant, Dept. of Electrical and Computer Engineering Sep, 2003 - Present

3D Object representation by curve-skeletons

- Developed algorithms for extracting curve-skeletons from general 3D objects using vector fields.
- Developed applications for curve-skeletons of 3D objects: shape matching, animation, volume decomposition.

Novel Indexing and Retrieval of Dynamic Brain Images

- Developed methods for efficient indexing and retrieval of functional MRI images of the human brain by content
- Designed and implemented a visualization application for fMRI data mining.

Visualization of time-varying data

- Feature extraction and tracking.

Teaching Assistant, Dept. of Electrical and Computer Engineering Sep, 2002 - May, 2003

- Taught basic programming skills to undergraduate students.

Siemens VDO Automotive, Timisoara, Romania

Software Engineer, Sep, 2001 - May, 2002

- Maintained several software components of a bigger embedded driver information and entertainment system.

Coral Computing Center Ltd, Cluj-Napoca, Romania

System Analyst and Programmer, Jun, 1997 - Sep, 2001

- Maintained and developed economic applications.
- Worked with clients to understand their needs and problems related to the software.
- Installed new versions of the applications and provided technical support to clients.
- Redesigned existing applications under a network version.

Publications: Conference Papers:

- Cornea N.D., Silver D., Min P. (2005). **Curve-Skeleton Applications**. IEEE Visualization, pp. 95-102, 2005.
- Chen M., Silver D., Winter A.S., Singh V., Cornea N. (2003). **Spatial Transfer Functions: A Unified Approach to Specifying Deformation in Volume Modeling and Animation**. Proceedings of the 2003 Eurographics/IEEE TVCG Workshop on Volume Graphics (VG'03), Tokyo, Japan, pp 35-44.
- Singh V., Silver D., Cornea N. (2003). **Real-time Volume Manipulation**. Proceedings of the 2003 Eurographics/IEEE TVCG Workshop on Volume Graphics (VG'03), Tokyo, Japan, pp 45-51.

Publications (continued): Journal Papers:

- Cornea N.D., Silver D., Min P. (2006). **Curve-Skeleton Properties, Applications and Algorithms**. Accepted for publication in IEEE Transactions on Visualization and Computer Graphics, 2006.
- Cornea N.D., Silver D., Yuan X., Balasubramanian R. (2005). **Computing Hierarchical Curve-Skeletons of 3D Objects**. The Visual Computer 21(11):945-955, Springer-Verlag, October, 2005.

Conference Reviewer:

- Eurographics, 2006
- IEEE Visualization, 2006
- ACM Siggraph, 2006
- ACM Symposium on Virtual Reality Software and Technology, 2006
- IEEE InfoVis, 2004

Academic Projects:

Rutgers University, New Brunswick, NJ

Traffic information system Jan - May, 2006

- Software Engineering Web Applications class
- Designed and implemented a web-based traffic information system which integrates with Google maps and Yahoo! Traffic to display traffic patterns.

Visyonet – A visualization system for network traffic data Sep - Dec, 2005

- Software Engineering class
- Developed a web-based visualization application of real-time and pre-recorded network traffic data in a wireless network testbed.

Reputation in P2P distributed computing environments Sep - Dec, 2005

- Secure e-Commerce class
- Evaluated reputation-based systems in a peer-to-peer distributed computing environment.

Database server Jan - Jun, 2004

- Database System Engineering class
- Designed and implemented from scratch a database server supporting transactions.

Technical University, Cluj-Napoca, Romania

Timetable assistant Jan - Oct, 2001

- B.Sc. graduation project
- Designed and implemented a timetable assistant application to help the class scheduling process in an educational environment.

Web Based Virtual Library Dec, 2000 – Mar, 2001

- Databases class
- Developed a web-based virtual library, part of a larger Virtual University project.

Skills:

Programming: C/C++, Java, shell scripting, JavaScript, PHP, Ruby, FoxPro, Assembler (x86), Pascal.
Visualization and computer graphics: The Visualization Toolkit (VTK), Java3D, AVS/Express.
Database Management Systems: MySQL, FoxPro, SQL Server.
Operating Systems: Windows, Linux.
Tools, toolkits and APIs: Win32 API, MFC, wxWidgets, Google Maps API, Macromedia FLASH, Law Governed Interaction (LGI), FSL (FMRIB Software Library).
Additional skills:

- Ability to learn quickly almost anything, especially things related to computers and computer science.
- Communication, diligence, team work, leadership.

Languages:

- Romanian - native
- English - fluent
- French – basic

Visa status: Currently on F1 student visa and in the process of obtaining permanent resident status.