Jian Chen, PhD

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OBJECTIVE

Creative and motivated lead scientific programmer with over 25 years of experience in software development of experimental control and simulation systems, multiple-modality medical image analysis, data analysis and visualization. Seeking to leverage my technical and professional expertise at a research-heavy department/institution.

CORE QUALIFICATIONS

- Broad experience in software development and implementation of experimental control and simulation systems.
- Strong knowledge of medical image processing algorithms and techniques.
- Solid background in computer vision with the applications primarily to medical image analysis. geometric modeling, and large-scale numerical computation.
- Proficient in computation, analysis, and visualization of research data.

COMPUTER SKILLS

Languages: C/C++, Python, TCL/TK, Javascript, MySQL, SQL**,** Matlab, R, OpenGLSL.

Libraries (APIs): OpenGL, OpenCL, CUDA, QT, wxWidget, NewMat, X11, X/motif.

OS: Unix, Solaris, Linux, Microsoft Windows.

Medical Image Format: DICOM, GE CT/MR, Siemens CT/MR.

PROFESSIONAL EXPERIENC

2012-Present: Dept. of Neuroscience, Baylor College of Medicine, Houston, TX.

Lead Scientific Programmer

- Designed and developed software for experiment systems in accordance with the lab research projects.

  Major Projects:
  - Primate Visual, Tactile and Temperature Measurement/Experiment Control System.
  - Realtime Eye and Object Motion Capture and Tracking System**.**
  - C++Based IDE (integrated development environment) and Interactive GUI for experimenters to generate and process NWB (Neurodata Without Borders) data without extra coding.
  - 4D (3D+t) Virtual Reality Software including design of the numerical algorithm models for arbitrary translation and rotation motion, and development of the visual and vestibular stimulus simulation with various types of 4D (3D+t) stereo-images and 6-degree-of-freedom-platform motion by using multiple computers, inter-process programming and socket programming techniques.
- Developed general software/tool to visualize and analyze experimental data.
- Responsible for lab's routine IT supports.

2006-2012: Dept. of Anatomy and Neurobiology, Washington University in St. Louis, St. Louis, MO.
Programmer Analyst II

- Developed experimental systems software in accordance with lab's research projects, including various types of visual and vestibular stimulus simulations.
- Performed lab's routine IT supports.
- Developed general software/tool to visualize and analyze experimental data.

2001-2006 Cardiovascular Image Analysis Laboratory, Washington University in St. Louis, MO
Research Associate
Research Projects:

- Accurate Recovery of 4-D left ventricular deformations from tagged MR images using volumetric B-Splines model.
- Automatic quantification of vascular structures from 3D MRA images using geometric deformable model and level set method.
- Interactive image processing and visualization toolkit for multiple modality medical image analysis.

1999-2001 Radiology Department, Weill Medical College of Cornell University, New York City, NY
Academic Staff
Research Projects:

- Automatic identification and quantification of carotid artery stenosis from 3D MRA Image using multiple scale and orientation filtering.
- Computer-aided diagnostic system for detection of lung nodules from helical CT Images.

1996-1999 Division of Medical Image Analysis, Osaka University Medical School, Osaka, Japan
JSPS (Japan Society for the Promotion of Science) Fellow
Research Projects:

- Segmentation of intersection and branch structures in medical images using orientation space filtering.
- Automatic extraction and measurement of leukocyte motion in micro-vessels using spatiotemporal image analysis.

EDUCATION

Ph.D. in Computer Science, Osaka University, Osaka, Japan
M.S. in Computer Science, Osaka University, Osaka, Japan
B.S. in Computer Science, Fuzhou University, Fuzhou, China

LANGUAGE

Fluent in English, Japanese and Mandarin

RECENT PUBLICATIONS

Mangin EN, Chen J, Lin J, Li N. Behavioral Measurements of Motor Readiness in Mice. 2023, Current Biology; 25, 1339-1352.