Guido Gerig

Neuro Imaging Research Lab

- Professor of Computer Science
- Adjunct Professor of Bioengineering
- Adjunct Professor of Psychiatry
- Faculty Member – Brain Institute
- Director of UTAH Center for Neuroimage Analysis (UCNIA)
- Adjunct Professor of Computer Science – UNC Chapel Hill
- Adjunct Professor of Psychiatry – UNC Chapel Hill

Current key research topics are segmentation of MRI/DTI of the early developing brain in healthy and high-risk subjects, longitudinal analysis of multi-shape complexes to describe growth trajectories of brain structures, building of normative population atlases of volumetric images and embedded shapes, and new methodologies for statistical analysis of brain white matter using diffusion tensor imaging (DTI). Tools and methods developed through driving clinical applications are open source (ITK) and made available to public.

The team

Research Assistant Professor

- Marcel Prastawa

Technical Program Manager

- Sylvain Gouttard

Graduate Students

- Xiaoyue Huang
- Jamed Fishbaugh
- Neda Sadeghi
- Anuja Sharma
- Avantika Vardhan
- Nishith Aniket Tirpankar
- Bo Wang

Undergrad students from International Exchange Program

- Arthur Coste
- Bastien Bessiere

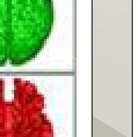
Collaborations on Multi Center Projects

Autism Centers of Excellence (IBIS Network), Joe Piven (PI), collaboration with Children's Hospital of Philadelphia, University of North Carolina, University of Washington, Washington University in St. Louis.

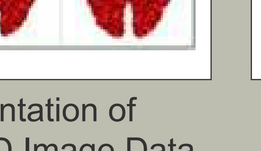
Silvio O. Conte Center for the Neuroscience of Mental Disorders, John Gilmore (PI), University of North Carolina

CAMID, Josephine Johns (PI), University of North Carolina

NAMIC: National Center for Biomedical Computing - Ron Kikinis (PI), Brigham and Women's Hospital, Harvard Medical School, Jack Van Horn UCLA

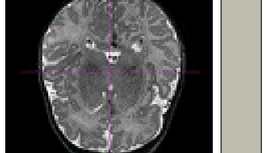


Characterization of Normal Brain Development, Weili Lin, University of North Carolina



Early Brain Development in Twins, John Gilmore, University of North Carolina at Chapel Hill

Continued Development and Maintenance of ITK-Snap 3D Image Segmentation Software, Paul Yushkevich, University of Pennsylvania

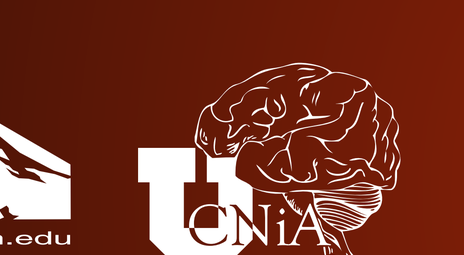


Down syndrome: Bridging Genes, Brain and Cognition, Julie Korenberg, Brain Institute University of Utah

Methodological Developments

Spatio-Temporal Image Analysis

4D Segmentation of Longitudinal 3D Image Data

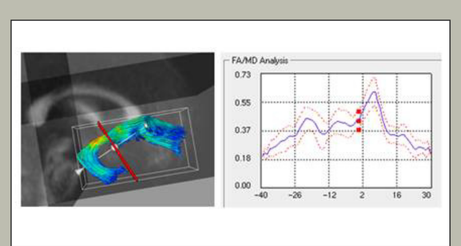


4D Shape Regression and Analysis

4D Analysis of White Matter Diffusion

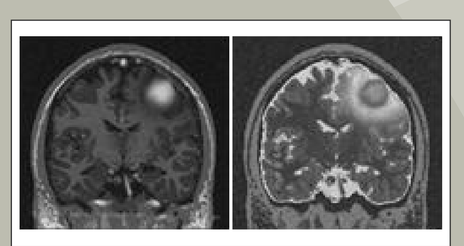
4D Modeling of Image Appearance Changes

Image Segmentation in the Presence of Pathology:

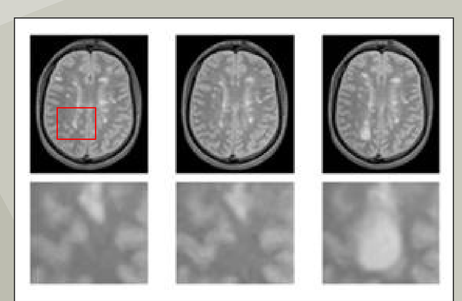


Modeling and Statistical Analysis of White Matter Fiber Tracts

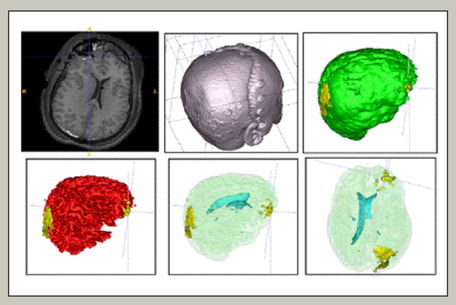
Image Bias Correction via Parallel Coil Sensitivity Analysis



Modeling of Tumor and Edema Growth: Synthetic Simulation System Segmentation Validation



Brain lesion modeling and segmentation



Traumatic Brain Injury: Segmentation of pathology and of change across time

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