Postdoctoral and research scientist positions
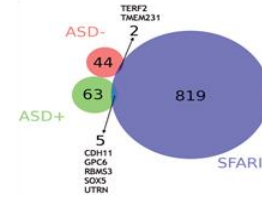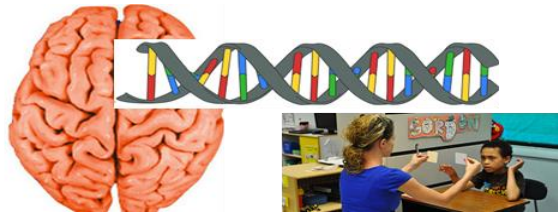
Postdoctoral Positions

1. Imaging Genetics
2. Multi-parametric Tumor Quantification
3. Deep Learning for Neuroimaging
4. Alzheimer's Disease Biomarker Discovery in PET and MRI

Research scientist positions:

1. Research Scientist position in Neuroimage Analysis

Postdoctoral Fellow and PhD Student Positions on Imaging Genetics at the University of Texas in Dallas, TX USA

Applications are invited for postdoctoral fellow and PhD student positions in our group at the University of Texas Southwestern, Dallas, TX USA in the area of imaging genetics involving the development of algorithms for the identification of novel multi-modal (imaging and genetic) feature combinations and probabilistic models that explain such imaging-genetic interactions and facilitate diagnoses and prognoses in neuropsychiatric, neurodegenerative, and neurodevelopmental brain disorders.

The successful candidate will be co-mentored by

- Prof. Albert Montillo (machine learning and image analysis)
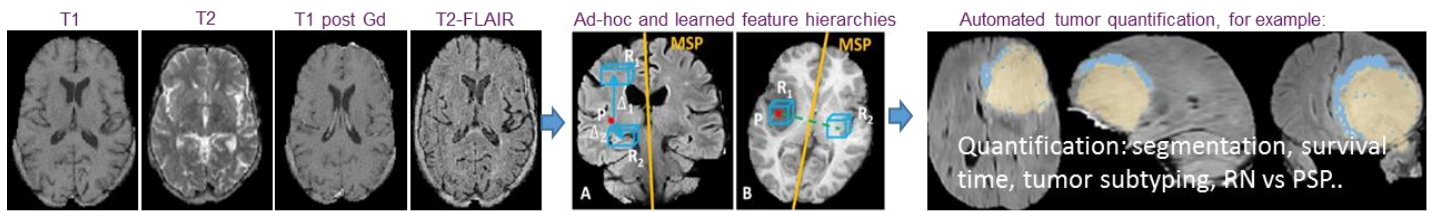- Prof. Genevieve Konopka (neuroscience, genetic

and closely collaborate with Prof. Joseph Maldjian, and Prof. Marco Pinho (neuroradiology). Research success is enhanced through our existing large growing databases with same-subject imaging-genetic information as well as available research-dedicated human and animal scanners. The candidate will benefit from membership in vibrant national and international research communities through our on-going collaborations with UPenn, UCLA, Philips and Siemens Research, as well as a large local neuroscience community at UTSW's O'Donnell Brain Institute, and UTD's Centers for Brain Health, Brain Performance, and Vital Longevity.

The salary compensation is very competitive and is enhanced by the relatively low cost of living in Dallas. The position is a fully funded 2-year post with health insurance. The funding for this position is stable and drawn from multiple start-up packages and R01 NIH grants. Visa assistance is available for international applicants. This is an excellent opportunity to launch your career: hone skills in research, teaching, leadership, grant writing, while receiving close mentorship from multiple professors and clinicians and a lively UTSW postdoctoral association. UTSW is ranked in the Top 25 Best Places to Work for Postdocs (The Scientist).

QUALIFICATIONS: The successful candidate will have a strong background in Statistics, Applied Math, Computer Science, Neuroscience, Electrical Engineering or related major, preferably with an emphasis on one or more of probability theory, genetics, or machine learning. Experience on probabilistic graphical models, dimensionality reduction, and sparse learning is highly desirable. Researchers with image processing pipelines and gene expression analysis are particularly encouraged to apply. Strong programming skills (working knowledge of Linux, C/C++, Python, Matlab) is desirable.

For consideration, please email your application, preferably as one single PDF-document including: cover letter, CV with publications & references, concise description of research interests & career goals, and academic transcripts to Prof. Albert Montillo (Albert.Montillo@UTSouthwestern.edu). Please use the subject line "PostDocFellow-ImgGen: (your name)". Applications will be reviewed immediately until the position is filled.

The University of Texas Southwestern is an Affirmative Action/Equal Opportunity Employer. Women, minorities, veterans and individuals with disabilities are encouraged to apply

Figure labels: T1 — T2 — T1 post Gd — T2-FLAIR — Ad-hoc and learned feature hierarchies — Automated tumor quantification, for example: — Quantification: segmentation, survival time, tumor subtyping, RN vs PSP..

Postdoctoral Fellow and PhD Student Positions: Multi-parametric Tumor Quantification in Dallas,TX USA

Applications are invited for postdoctoral fellow and PhD student positions in our group at the University of Texas Southwestern, Dallas, TX USA, in the area of multi-parametric tumor quantification. This research involves the construction of predictors of individual survivability and discriminators of individual treatment outcomes using advanced deep learning methodologies and the optimal fusion of multiple channels of neuroimages using big data approaches. Research success is enhanced through our existing large and growing databases with multi-modal tumor imaging data, as well as available research-dedicated human and animal MRI scanners at 3.0-9.4T, as well as ready access to PET/CT, MEG, EEG. The candidate will benefit from membership in vibrant national and international research communities through our on-going collaborations with UPenn, UCLA, Univ. of Washington, Philips and Siemens Research, as well as a large local neuroscience community at UTSW's O'Donnell Brain Institute, and UTD's Centers for Brain Health, Brain Performance, and Vital Longevity. The candidate will also benefit from membership in a diverse group including neurosurgeons, neuroradiologists, neuroscientists, geneticists, psychiatrists, physicists, biostatisticians, and computer scientists and from exposure to our group's previous work on medical image analysis.

The salary compensation is very competitive and is enhanced by the relatively low cost of living in Dallas. The position is a fully funded 2-year post with health insurance. The funding for this position is stable and drawn from multiple start-up packages and R01 NIH grants. Visa assistance is available for international applicants. This is an excellent opportunity to launch your career: hone skills in research, teaching, leadership, grant writing, while receiving close mentorship from multiple professors and clinicians and a lively UTSW postdoctoral association. UTSW is ranked in the Top 25 Best Places to Work for Postdocs (The Scientist).

QUALIFICATIONS: The successful candidate will have a strong background in Applied Math, Computer Science, Electrical Engineering, Biomedical Engineering, Neuroscience or related field, preferably with emphasis on image processing and analysis. Experience in survivability modeling, proportional hazard approaches (including cox models), tumor subtypes, image feature/texture extraction is highly desirable. Researchers with a background in multi-contrast MRI including advanced MRI (perfusion, diffusion), machine learning (deep neural networks and decision forests) are particularly encouraged to apply. Strong programming skills (working knowledge of Linux, C/C++ including ITK, Python, Matlab) is desirable.

For consideration, please email your application, preferably as one single PDF-document including: cover letter, CV with publications & references, concise description of research interests & career goals, and academic transcripts to Prof. Albert Montillo (Albert.Montillo@UTSouthwestern.edu). Please use the subject line "PostDocFellow-TumorQt: (your name)". Applications will be reviewed immediately until the position is filled.

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Postdoctoral Fellow and PhD Student Positions on <u>Deep Learning</u> for Brain Connectomics at the University of Texas Southwestern and University of Texas Dallas

Applications are invited for postdoctoral fellow and PhD student positions in our group at the University of Texas Southwestern, Dallas, TX USA and the University of Texas Dallas – both in Dallas, TX USA in the area of deep learning. The research involves the development of state-of-the art deep learning algorithms (DNN, CNN) and probabilistic models for multi-modal neuroimage analysis using our large existing and growing database of neuroimaging data spanning brain injury, diseases impacting cognition: (Alzheimer's, cardiovascular, schizophrenia, epilepsy, brain tumors) and chemical addictions. The project develops new tools for the systematic discovery of brain connectomics biomarkers of brain injury, and for outcome predictions in disease and drug addictions. The candidate will benefit from membership in vibrant national and international research communities through our on-going collaborations with UPenn, UCLA, Univ. of Washington, Philips and Siemens Research, as well as a large local neuroscience community at UTSW's O'Donnell Brain Institute, and UTD's Centers for Brain Health, Brain Performance, and Vital Longevity. The candidate will also benefit from regular interaction with computer scientists, statisticians, high performance computing scientists, neuroradiologists, neuroscientists and geneticists and from exposure to our group's previous work on deep machine learning and big data medical image analysis.

The salary compensation is very competitive and is enhanced by the relatively low cost of living in Dallas. The positions include: fully funded 2-year post with health insurance, 5 year research assistant positions (for incoming PhD candidates), and 2 year Research Scientist positions. The funding for the positions are stable and drawn from multiple sources. Visa assistance is available for international applicants. This is an excellent opportunity to launch your career: hone skills in research, teaching, leadership, grant writing, while receiving close mentorship from multiple professors and clinicians and a lively UTSW postdoctoral association and grad school. UTSW is ranked in the Top 25 Best Places to Work for Postdocs (The Scientist).

QUALIFICATIONS: The successful candidate will have a strong background in Computer Science, Mathematics (Applied Math, Statistics), Electrical Engineering, Neuroscience or related field. Experience in signal/image processing (MEG/EEG, MRI, PET) and image analysis is highly desirable. Researchers with machine learning expertise in Deep Learning (DNN, CNN), probabilistic graphical models, ensemble methods, and SVM are particularly encouraged to apply. Solid big data programming skills with a working knowledge of Linux, C/C++, Python (scikit-learn, Theano, PyMVPA), and Matlab is desirable.

For consideration, <u>please email your application</u>, preferably as one single PDF-document including: cover letter, CV with publications & references, concise description of research interests & career goals, and academic transcripts to: Prof. Albert Montillo (Albert.Montillo@UTSouthwestern.edu). Please use the subject line "PostDocFellow-DeepLearn: (your name)". Applications will be reviewed immediately until the position is filled.

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Postdoctoral Fellow and PhD Student Positions on Alzheimer's Disease Biomarker Discovery in MEG, PET and MRI

Applications are invited for postdoctoral fellow and PhD student positions at the University of Texas Southwestern, Dallas, TX USA, in the area of **Alzheimer's biomarker discovery.** The research entails the development and validation of neuroimaging biomarkers for the earliest diagnosis of Alzheimer's and for long term prognostics of the conversion of MCI to Alzheimer's. Research success is enhanced through access to our Alzheimer's Disease Center (http://www.utsouthwestern.edu/education/medical-school/departments/neurology/programs/alzheimers-disease-center/about-us.html) and its ongoing data collection, available research-dedicated human MRI scanners at 3.0-7.0T, and ready access to PET/CT with cyclotron, MEG, EEG and our high performance compute cluster. The successful candidate will benefit from membership in vibrant national and international research communities through our on-going collaborations with UPenn, UCLA, Univ. of Washington, Philips and Siemens Research, as well as a large local neuroscience community at UTSW's O'Donnell Brain Institute, and UTD's Centers for Brain Health, Brain Performance, and Vital Longevity. The candidate will also benefit from membership in a diverse group including neuroradiologists and medical physicists at our Advanced Imaging Research Center and within the Department of Radiology, neuroscientists, medical imaging scientists and exposure to our group's previous work on medical image analysis.

QUALIFICATIONS: The successful candidate will have a strong background in Computer Science, Applied Math, Neuroscience, Electrical Engineering or related field, preferably with emphasis on image processing and analysis. Researchers with machine learning background or Alzheimer's disease biomarkers are particularly encouraged to apply. Strong knowledge of programming (working knowledge of Linux, C/C++, Python, Matlab) is desirable.

For consideration, please email your application, preferably as one single PDF-document including: cover letter, CV with publications & references, concise description of research interests & career goals, and academic transcripts to: Prof. Albert Montillo (Albert.Montillo@UTSouthwestern.edu). Please use the subject line "PostDocFellow-AD: (your name)". Applications will be reviewed immediately until the position is filled.

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Research Scientist position in Neuroimage Analysis
at the University of Texas   in Dallas, TX USA

Applications are invited for a Research Scientist position in our group at the University of Texas Southwestern, Dallas, TX USA. The role entails the development of algorithms and software for the quantitative analysis of our large growing database of neuroimaging data including Alzheimer's, brain injury, autism, epilepsy, cancer, in humans to discover new biomarkers of disease, brain injury and drug addictions. The successful candidate will benefit from ready access to research-dedicated, high performance compute clusters (including one of the world's largest clusters), and simplified code development through the use of large multi-core and GPU nodes and direct access to the latest IDEs (C/C++, Python, Matlab). This position is an excellent opportunity to launch your career: hone skills in programming and leadership, while receiving close mentorship from multiple professors (computer science, neuroscience, biostatisticians, physicists, and clinicians) and exposure to the group's cutting edge work on medical image analysis.

This is a fully funded position, nominally 2 years, but with strong potential for on-going renewal with satisfactory performance. Visa assistance is available for international applicants. The successful candidate will benefit from membership in a vibrant national and international research community with on-going collaborations with UPenn, UCLA, Univ. of Washington, Phillips and Siemens Research, as well as a large local neuroscience community at UTSW's O'Donnell Brain Institute, and UTD's Centers for Brain Health, Brain Performance, and Vital Longevity.

QUALIFICATIONS**:** The candidate will have a strong background in Computer Science, Software Engineering, or Electrical Engineering, or related field, preferably with an emphasis on image processing and analysis. A **Bachelor's degree with 4 years** of experience or a **Master's** degree is required, while a **PhD** is preferred. Experience in one or more of the primary neuroimaging software pipelines (**SPM, FSL, AFNI, or FreeSurfer**), and familiarity with advanced MRI, MEG or EEG is required. Researchers with an interest in machine learning are particularly encouraged to apply. The candidate MUST demonstrate strong programming skills with at least 2 years of experience in Linux, Python, and another major language, preferably Matlab. Expertise in C/C++ (ITK library is a huge plus), machine learning Python libraries (sklearn, theano, PyMVPA) are beneficial), as is experience in Linux shell scripting, DICOM and GIT version control. The candidate will help automate pipelines running on our high performance compute cluster, and will be able to exercise your strengths in distributed computing, OpenMP/MPI.

For consideration, please email your application, preferably as one single PDF-document including: cover letter, resume with reference list, a concise description of career goals, and academic transcripts to Prof. Albert Montillo (Albert.Montillo@UTSouthwestern.edu). Please use the subject line " ResScientist: (your name) ". Applications will be reviewed immediately until the position is filled.