Covering letter for Postdoctoral Position

I wish to offer my candidature for post-doctoral position in the field of functional magnetic resonance imaging and diffusion tensor imaging. My doctoral study on visually challenged children (6-12 years) and adult (13-19 years) separated into three groups early blind late blind and sighted controls that were aimed at the development of MRI compatible paradigm design to measure the hemodynamic responses for Braille reading, auditory perception, tactile and spatial perception. The differential bold brain activation pattern for the visually challenged subjects and its significance in differential training was attempted. The extent of neurodegeneration was ascertained using voxel-based morphometry, surface-based morphometry, task-based functional connectivity, cortical thickness, and diffusion tensor imaging. After completion of my doctoral study I have also worked on neurodegenerative disorders namely Parkinson’s Disease (PD), Multiple System Atrophy (MSA), and Progressive Supranuclear Palsy (PSP) was aimed at developing suitable paradigm designs to measure hyposmia disorder and the hemodynamic response sensory olfaction loss in the concerned brain areas and the effect of dopaminergic therapy and progress of the disease. The differential BOLD, functional connectivity, cortical thickness and EEG associated brain activation pattern for the parkinsonian patients, and its significance in differential diagnosis was attempted using SPM, CONN, CAT12, EEGLAB, and LORETA software on MATLAB software.

Please let me know if I can provide you with further information

Recommendation:

1. Prof. S. Senthil Kumaran; Department of NMR and MRI Facility, All India Institute of Medical Sciences; New Delhi – 110 029 India: Phone: 91-11-26593253, 26546452
2. Prof. N. R. Jagannathan Department of NMR and MRI Facility, All India Institute of Medical Sciences; New Delhi – 110 029
3. Prof. Rohit Saxena MD, PhD. Dr. Rajendra Prasad Centre for Ophthalmic Sciences, All India Institute of Medical Sciences, New Delhi-110029.
I wish to establish myself as a neuroscientist. I am passionately driven towards understanding the functional complexities of human brain. Mankind's lack of complete understanding of human brain and its pathologies keeps me amply motivated towards learning and perfecting the newer skills sets and techniques. I am adept in designing, executing, analyzing and interpreting the experiments with a few of the neuroimaging techniques, especially MRI, fMRI, MRS, EEG, and processing of MEG data. I am a versatile and adaptive team worker and would be an asset to your team.

❖ CURRENT AFFILIATION:
   2018-till date: Working as Research Associate in department of NMR and MRI facility

❖ ACADEMIC MILESTONES:

I. 2015-2018: Research officer at Department of Neurology, AIIMS, New Delhi from (November 2015-October 2018)

II. 2010-2016: (PhD from) Department of NMR and MRI facility, All India Institute of Medical Sciences, Ansari Nagar, New Delhi – 110 029 INDIA, Thesis submitted in Jan, 2016, Degree awarded in Sep, 2016
   Ph.D Thesis title “Neurocognitive and visual pathway alteration associated with perception and semantic tasks in visually impaired subjects, using functional magnetic resonance imaging (fMRI)”.

✓ Course Work:
   Basics of MRI and fMRI, Pulse sequences, MRI Artifacts, Diffusion tensor imaging (DTI), Measurement parameters and image contrast, MRI instrumentation, Contrast agents, fMRI (BOLD) paradigm generation and presentation.

✓ Practical Experience:
   • MRI Image acquisition and knowledge of pulse sequences
• Stimulus Presentation Programs/Software- Super-lab, E-prime
• SPM, CONN, CAT12, FSL, Free-surf er and Brain Voyager, Nordic-ICE, 3D Slicer, DTI studio.
• EEG data acquisition and analysis (Net-station, EEG lab, LORETA).
• MEG data acquisition and analysis.
• Statistical Analysis in SPSS software.
• Adept in Microsoft Excel, Access, Word and Power-point
• Excellent writing skills in procuring funds for the Research Projects and writing abstracts/articles/manuscripts.
• Writing grants for extramural funding of one study from Department of Science and Technology, Government of India: “Functional and neurobiological analysis in visually impaired subjects”
✓ Fellowships:
  Junior research fellow 2019-2014 (DST) funded project titled “Neurocognitive changes associated with perception, spatial orientation, speech and language process in visually challenged subjects using fMRI”. Ref No.- No.F.9-271/10/RS

II. 2006-2008: M.Sc. Biotechnology (University of Rajasthan)
✓ Course Work:
  Animal physiology and tissue culture, Biochemistry, Biophysics, Biostatistics, Bioinformatics, Cell biology, Genetics, Immunology, Molecular biology, Microbiology
✓ Marks Secured :73%
✓ Practical Experience:
  Implication of ginger extract and INM-5 on neuro-behavioral alteration on rat and in-vitro cell line at Radiation Biology department at INMAS (DRDO) Delhi

✓ Marks Secured: 72%

❖ Awards and Honors:
  1. International Society for Magnetic Resonance in Medicine Magna Cum Laude Merit Award 2017

❖ WORKSHOPS (Hands-on):
  1. Workshop on Sequence Development and Pulse Programming Workshop, Bengaluru, India. 18th and 19th February 2019
  2. Workshop on “CURRY-MEG application and analysis” Clinical Curry School, March 5th-7th, 2015, NIMHANS, Bangalore, India.
3. Workshop on Sequence Development Mode, Data Handling and Intelli Space Discovery February 18 - 19, 2019; Philips Innovation Campus, Bengaluru, India
5. Workshop on “invivoMR Spectroscopy” from 15th September to 16th September 2012, New Delhi, India.
6. DST and SERC Training on “Biophysics in Medicine: Advanced training in imaging of experimental models” from 3rd to 9th February 2011, AIIMS, New Delhi, India.

❖ PUBLISHED ABSTRACTS:
 ✓ Oral Presentations:


 ✓ Abstract Presented:
◆ International:


**National:**


**SEMINARS AND CONFERENCES ATTENDED:**

1. INDO-EURO Parkinson's Disease Summit, 14-15 March 2015, New Delhi, India.

2. 19th National Magnetic Resonance Society, meeting 2013 held at Indian Institute of
Technology Mumbai. during 3rd to 6th February 2013.

3. 18th National Magnetic Resonance Society, meeting 2012 held at Indian Institute of Science. Bangalore during 3rd to 6th February 2012.

4. Workshop on “NMR in defense application” from 26th to 27th November 2012 in Institute of Nuclear Medicine & Allied Sciences (INMAS) New Delhi, India.

5. 7th Asian biophysics association (ABA) symposium and annual meeting of Indian Biophysical Society (IBS) held from 30th to 2nd February 2011 organized by Department of NMR and MRI facility, AIIMS, New Delhi, India.

6. International symposium on “Medical imaging: Perspectives on perception and diagnostics” on 9th and 10th December 2010 at IIT New Delhi, India.

❖ MEMBERSHIPS:

1. Lifetime Member of National Magnetic Resonance Society (NMRS).
2. Active Member of International Society of Magnetic Resonance in Medicine (ISMRM) since 2011.

Referees:

1. NR Jagannathan: jagan1954@hotmail.com

   Head and Professor, Department of NMR and MRI facility, All India Institute of Medical Sciences, New Delhi, India

2. Senthil Kumaran S: senthilssk@yahoo.com

   Professor, Department of NMR and MRI facility, All India Institute of Medical Sciences, New Delhi, India

3. Rohit Saxena: rohitsaxena80@yahoo.com

   Professor, RPC centre, All India Institute of Medical Sciences, New Delhi, India