

## Alexander Beckett, PhD

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### Employment & Education

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2015-present: Postdoctoral Scholar, University of California, Berkeley  
2013-2015 Research Scientist, Advanced MRI Technologies, LLC, Sebastopol, CA  
Visiting Scholar, University of California, Berkeley, CA (Honorary Affiliation)  
2009-2013: University Of Nottingham: Ph.D. Visual Neuroscience  
Supervisor: Dr Denis Schluppeck.  
**'The use of High-field fMRI to study neural selectivity in the human visual system',**  
Supervisor: Dr Denis Schluppeck.  
2008-2009: University Of Nottingham: M.Sc. Cognitive Neuroscience and Neuroimaging (Distinction)  
Supervisor: Dr Denis Schluppeck.  
• **'Investigating the benefits of multi-Echo EPI fMRI in the Ventral Temporal area',**  
2003-2007: University Of Nottingham: B.Sc. (Hons.) Psychology and Cognitive Neuroscience, 1<sup>st</sup> class.

### Research Interests

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I am interested in the use of novel functional MRI techniques (at 3T and 7T) to study the processing of visual stimuli, in particular investigating the ways in which high-resolution scanning can offer improvements and advantages in this area. I am also interested in the development of novel imaging techniques for high-resolution functional imaging.

### Skills

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- Analysing fMRI data both in Matlab (mrTools / VISTA) and with software such as FSL and freesurfer.
- Creating, programming, and displaying visual stimuli using Matlab and a variety of toolboxes.
- Experience with coding in Java and C++.
- Trained MRI scanner operator (Philips Achieva)

### Teaching Experience

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2008-2010: Demonstrator, Practical Methods in Psychology and Cognitive Neuroscience – Assisted 2nd year lab class focussing on using visual psychophysics to study the effect of spatial frequency on motion detection, and marked the lab reports.

2010: Demonstrator, Computer programming for stimuli and analysis with demonstration of fMRI data analysis packages – assisted in teaching MSc students to use Matlab for general analysis and stimulus presentation, and to use SPM for the analysis of fMRI data. Also marked the assessment at the end of the module.

### **Awards**

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December 2010: AVA Meeting Travel Bursary  
April 2011: Guarantors of Brain Travel Grant  
September 2012: Guarantors of Brain Travel Grant

### **Journal Articles**

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Chen, **Beckett**, Verma & Feinberg (2015) 'Dynamics of Respiratory and Cardiac CSF Motion Revealed with Real-time Simultaneous Multi-Slice EPI Velocity Phase Contrast Imaging' *Neuroimage*, In Press

Feinberg, **Beckett** & Chen (2013) 'Arterial Spin Labelling with Simultaneous Multi-slice Echo Planar Imaging' *Magnetic Resonance In Medicine*, 70 (6), 1500-1506

Sanchez-Pancheulo, Besle, **Beckett**, Bowtell, Schluppeck & Francis (2012) 'Within-Digit Functional Parcellation of Brodmann Areas of the Human Primary Somatosensory Cortex Using Functional Magnetic Resonance Imaging at 7 Tesla' *Journal of Neuroscience*, 32 (45): 15815-15822

**Beckett**, Peirce, Sanchez-Panchuelo, Francis & Schluppeck (2012) 'Contribution of large scale biases in decoding of direction-of-motion from high-resolution fMRI data in human early visual cortex' *Neuroimage*, 63 (3): 1623-1632.

Bowns & **Beckett** (2010) 'An independent effect of spatial frequency on motion integration reveals orientation resolution' *Vision Research*, 50 (15): 1445-51.

### **Conference Abstracts**

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**Beckett**, Vu, Keil, Setsompop, Wald, Schillack & Feinberg 'Assessment of coil arrays with small loop diameter at 7T for micron-scale resolution fMRI of human neocortex.' ISMRM, 2016

Feinberg, **Beckett**, Vu & Chen 'Cine Phase Contrast Simultaneous Multi-Slice Imaging of blood flow and CSF motion.' ISMRM, 2016

Vu, **Beckett**, Setsompop & Feinberg 'Evaluation of SLICE Dithered Enhanced Resolution Simultaneous Multislice (SLIDER-SMS) for human fMRI at 3T.' ISMRM, 2016

**Beckett**, Chen & Feinberg 'Novel coil designs for ultra-high resolution cortical fMRI at 7T.' SfN, 2015

**Beckett**, Chen, Verma & Feinberg 'Velocity phase imaging with simultaneous multi-slice EPI reveals respiration driven motion in spinal CSF' ISMRM, 2015

**Beckett**, Chen, Vu & Feinberg 'A novel design 20-channel head coil for cortical imaging with ultra-high resolution' ISMRM, 2015

Chen, **Beckett** & Feinberg 'Background suppressed arterial spin labeling with simultaneous multi-slice echo planar imaging' ISMRM, 2015

Feinberg, Chen & **Beckett** 'Arterial Spin Labeling with Simultaneous Multi- Slice EPI compared to EPI and 3D GRASE' ISMRM, 2014

Chen, **Beckett**, Verma & Feinberg '7D velocity phase imaging with zoomed simultaneous multi-slice EPI reveals respiration driven motion in brain and CSF' ISMRM, 2014

**Beckett**, Peirce, Francis, Sanchez-Panchuelo & Schluppeck 'Multivariate classification of pattern-motion in human visual cortex using high-field fMRI' Society for Neuroscience, 2012

**Beckett**, Peirce, Francis & Schluppeck 'Multivariate classification of motion direction using high-field fMRI' VSS, 2011

Bowns & **Beckett** 'A tool for investigating orientation resolution in the human vision system' ECVF, 2010

### **Professional Activities**

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Member of Society for Neuroscience

Member of International Society for Magnetic Resonance in Medicine