

Personal Statement

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As a scientist specializing in medical image analysis, my approach to research and collaboration is guided by a deep commitment to the development of high-quality, open-source computational strategies for biological and medical imaging. I believe that such commitments create a supportive and inclusive environment where knowledge is shared, diverse perspectives are valued, and the quality of work is held to the highest standards. Their importance has only increased since returning to the University of Virginia in 2010 as an Assistant Professor and subsequently during my current tenure as an Associate Professor.

Throughout my academic career, I have benefited from caring mentors who have promoted excellent academic scholarship and integrity while instilling values of mutual respect. As a prominent example, I continue to benefit immensely from relationships developed during my initial post-graduate years at the PICSL lab, particularly those at the University of Pennsylvania in the Penn Image and Computing Science Laboratory under the direction of Dr. James C. Gee. While at the University of Pennsylvania, my colleague, Dr. Brian B. Avants, and I co-founded the Advanced Normalization Tools (ANTs). This software package has become one of the most widely used toolkits in the field for image data processing and analysis which are described by some of the most highly cited publications in the field. Other packages, such as the well-known FreeSurfer software package, have incorporated well-performing and complementary ANTs components into their own libraries. Recently, Dr. Gee and I have leveraged this ANTs development in receiving two explicitly ANTs-related NIH R01 grants.

Given my role in the development of such widely used research tools, my focus has provided significant opportunities for mentoring, teaching, and consulting within the research community. I have provided numerous tutorials and workshops at various conferences and at different academic and scientific institutions. I have also organized this tutorial material for online access. This has also resulted in an expansion of the circle of my collaborators beyond the University of Virginia to include collaborations with people at such academic entities and scientific institutions as the University of California, Irvine, the University of Pennsylvania, and the Allen Brain Institute. In addition, given the credibility that the ANTs software has, I am often asked to provide evaluative comparison data for international competitions and standardized data for further processing of large-scale studies.

In parallel with the appreciation I have for my many external opportunities for collaboration and mentoring, I am honored to be associated with the University of Virginia and feel extremely fortunate to work with its high quality faculty in exploring fascinating research questions. I look forward to continuing my academic career at UVa where I can best provide the necessary expertise for medical imaging data science.

- *Describe engagement with learners in your mission area of excellence (clinical, research, education, community).*
- *Give a brief self-evaluation regarding adherence to ASPIRE values. You should describe your contributions to at least one of the ASPIRE values (Accountability, Stewardship, Professionalism, Integrity, Respect, Equity).*