

# MANISH U. KURSE, Ph.D.

<b>Contact</b>	Northridge, CA 91325 607-229-2785 manish.kurse@gmail.com	<a href="http://manishkurse.github.io/">http://manishkurse.github.io/</a> <a href="https://www.linkedin.com/in/manishkurse">linkedin.com/in/manishkurse</a> <a href="https://github.com/manishkurse">github.com/manishkurse</a>
<b>Work Experience</b>	<p><b>Senior R&amp;D Engineer</b>, <i>Boston Scientific Corp., Valencia, CA</i> <span style="float: right;">2012-present</span></p> <ul style="list-style-type: none"><li>• Used linear regression, hypothesis testing, sensitivity analysis on sensor data from engineering and preclinical studies that I led, to successfully evaluate MRI safety of neuromodulation systems. The strategy developed is now being used for multiple projects.</li><li>• Performed engineering analysis, literature review, drafted technical reports, and participated in conversations with the US Food and Drug Administration (FDA) that led to Boston Scientific's first MRI conditional neuromodulation system in the US, which was critical for Boston Scientific to meet competition in the market.</li></ul> <p><b>Research Assistant</b>, <i>University of Southern California, Los Angeles, CA</i> <span style="float: right;">2007-2012</span></p> <ul style="list-style-type: none"><li>• Designed experiments, gathered multi-sensor data by testing of human cadaveric fingers.</li><li>• Demonstrated that biomechanical models generated using symbolic regression implemented in Eureqa were more accurate, robust to noise and parsimonious compared to other multivariable regression models (linear, polynomial, nonlinear).</li><li>• Developed a novel non-linear finite element simulation environment in C/C++ to model the mechanics of elastic tendon networks.</li><li>• Implemented stochastic hill climbing optimization on the USC Linux cluster with Matlab parallel computing toolboxes to infer models of the human finger from experimental data and evaluated their accuracy on cross-validation data.</li><li>• Used Principal Component Analysis to investigate dimensionality of finger movement data.</li></ul>	
<b>Side Projects</b>	<ul style="list-style-type: none"><li>• Used Python to perform exploratory analysis on personal Fitbit Charge HR data.</li><li>• Used Python scikit-learn Random Forest Regression to predict bike sharing demand (Kaggle)</li><li>• Used SQL, Python to explore San Francisco bike share and restaurant data and applied k-nearest neighbors to find restaurants closest to bike stations.</li><li>• For other projects and details: <b>manishkurse.github.io</b></li></ul>	
<b>Skill Summary</b>	<ul style="list-style-type: none"><li>• Machine learning, data analysis, statistics, mathematical modeling, optimization</li><li>• Designing and performing experiments to collect data (engineering and preclinical)</li><li>• Communication of results to business leaders, regulatory agencies and research community</li><li>• Programming: Python (NumPy, Pandas, scikit-learn, matplotlib), SQL, Matlab, C/C++</li></ul>	
<b>Courses</b>	<ul style="list-style-type: none"><li>• Machine learning, Applied Mathematics, Biostatistics, Advanced Dynamics, Linear Control Systems, Neuroscience, Neuromuscular Biomechanics</li><li>• Self taught: SQL, Machine Learning (Andrew Ng, Coursera)</li></ul>	
<b>Education</b>	<p><b>University of Southern California</b>, Los Angeles, CA <span style="float: right;">2012</span> Ph.D., M.S., Biomedical Engineering, GPA: 3.96/4.0</p> <p><b>Cornell University</b>, Ithaca, NY <span style="float: right;">2007</span> Graduate course work, Mechanical Engineering, GPA: 4.03/4.0</p> <p><b>Indian Institute of Technology (IIT) Madras</b>, Chennai, India <span style="float: right;">2006</span> Bachelor of Technology, Mechanical Engineering, GPA: 9.08/10.0</p>	
<b>Honors/Awards</b>	<p>Knowledge Driven Product Development Award, <i>Boston Scientific</i> <span style="float: right;">2013</span></p> <p>Checkered Flag Award, <i>Boston Scientific</i> (awarded for going above and beyond to make a difference to a program supporting company goals) <span style="float: right;">2012, 2013</span></p> <p>Olin Fellowship for graduate study, <i>Cornell University</i> <span style="float: right;">2006</span></p>	