

Ravi Rasik Patel

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Education

2013	BS	Georgia Institute of Technology	Biomedical Engineering
		GPA: 3.35/4.00	
2016	MS	University of Colorado-Denver	Mechanical Engineering
2018	PhD	University of Colorado-Denver	Engineering and Applied Sciences
		Dissertation: <i>Development of a Patient Specific Porous Poly(para-Phenylene) Spinal Cage for Lumbar Interbody Fusion</i>	

Software Skills

Finite element analysis using ABAQUS (5 years), image segmentation in ScanIP (5 years), 3D design in SolidWorks (8 years), scripting in MATLAB (9 years), data acquisition in LabVIEW (2 years)

Professional Experience

2018-Present	Consulting Engineer, K1C, Denver, CO <ul style="list-style-type: none">Developed finite element model for analysis of compression a nickel-titanium based intramedullary nail for ankle fusion
2017-Present	NSF Intellectual Property Intern, Furman IP Law, Boulder, CO <ul style="list-style-type: none">Conducted prior art searches for attorney to determine product patentabilityDrafted invention disclosures and patent claims strategically to maximize client IP portfolio options and create the broadest coverage of existing patents
2014-Present	Graduate Research Assistant, University of Colorado Denver <ul style="list-style-type: none">Developed Finite Element model for analysis of porous polymer spinal fusion cages using patient specific images and created a model for prediction of endplate properties from demographic and radiographic dataAnalyzed mechanical properties of lumbar vertebrae and spinal instrumentation using electromechanical testing systems with custom test fixtures (Instron, MTS, Bose) according to ASTM F2267
2013-2014	Research Scientist, LumaMed, Inc., Norcross, GA <ul style="list-style-type: none">Performed power throughput analysis of a novel optical microscope for detection of cancer tumor marginsDeveloped LabVIEW program for image subtraction of cross polarized cameras
2010-2012	Research and Development Co-op, Medshape, Inc. Atlanta, GA <ul style="list-style-type: none">Developed and modeled various surgical implant and instrument designs for shoulder, foot/ankle, and knee orthopedic procedures within the quality system defined by ISO 13485.Evaluated mechanical strength and integrity of orthopedic implants using electromechanical material testing systems (Instron, MTS, TA) for validation testing according to ASTM and ISO standards for each respective device.

Publications

3. **Patel, R. R.**; Noshchenko, A; Carpenter, R. D.; Baldini, T.; Frick, C. P.; Patel, V. V.; Yakacki, C. M. (2018) Evaluation and Prediction of Human Lumbar Vertebra Endplate Mechanical Properties Using Indentation and Computed Tomography. *Journal of Biomechanical Engineering*, (140)
2. Ahn, H.*; **Patel, R.R.***; Hoyt, A.; Lin, A.; Torstrick, B.; Guldberg, R.; Frick, C.P.; Carpenter, R.D.; Yakacki, C.M. (2017) Load Sharing and Mechanical Strength of Bone Ingrowth in Porous Poly(para-phenylene) scaffolds. *Acta Biomaterialia*, (72) (*indicates equal contribution)
1. Collins, D. A., Yakacki, C. M., Lightbody, D., **Patel, R. R.**, & Frick, C. P. (2016). Shape-memory behavior of high-strength amorphous thermoplastic poly (para-phenylene). *Journal of Applied Polymer Science*, 133(3)