

Radhika Patil

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EDUCATION

Stanford University <i>PhD Candidate, Mechanical Engineering</i>	California, USA 2016-Present
Indian Institute of Technology (IIT) Gandhinagar <i>Bachelor of Technology in Mechanical Engineering, Minor in Computer Science and Engineering</i>	Gujarat, India 2012 – 2016
<ul style="list-style-type: none">▪ Awards & Honors: President's Gold Medal for highest cumulative GPA in entire graduating batch for 2016; Academic Excellence Scholarship for highest cumulative GPA in entire batch for 2013, 2014, 2015; Dean's list for all semesters.▪ All India Rank 3079 in 560,000 students appearing for IIT Joint Entrance Exam 2012	

WORK EXPERIENCE

Gu Lab <i>Researcher</i>	Stanford University June 2017 – Present
<ul style="list-style-type: none">▪ Conduct hands-on experimental research for mechanical characterization of nanoparticles and thin films.▪ Plan experiments on nanoparticle synthesis, in-situ mechanical testing, process and analyze experimental data, model observations for underlying deformation mechanisms.	
<p>Selected Projects and Publications:</p> <ul style="list-style-type: none">▪ Kiani, M.T., Patil, R.P. and Gu, X.W., 2019. <i>Dislocation surface nucleation in surfactant-passivated metallic nanocubes</i>. <i>MRS Communications</i>, 9(3), pp.1029-1033.▪ Patil, R.P., Doan, D., Aitken, Z.H., Chen, S., Kiani, M.T., Barr, C.M., Hattar, K., Zhang, Y.W. and Gu, X.W., 2020. <i>Hardening in Au-Ag nanoboxes from stacking fault-dislocation interactions</i>. <i>Nature Communications</i>, 11(1), pp.1-9.▪ Yin, Y., Patil, R.P. Park, J.M., Gu, X.W., Cai, W. <i>Modelling viscoelastic properties of optically clear adhesive polymeric thin films</i>. (In Process, collaboration with Samsung Display)▪ Patil, R.P, Gu, X.W., <i>Strain rate dependent deformation of amorphous cobalt sulfide nanoboxes</i>. (In Process)	

University of Washington <i>Summer Intern, Boehler Research Group</i>	Seattle, Washington May 2015 – July 2015
<ul style="list-style-type: none">▪ Conduct experiments to develop acoustic metamaterials for controlled wave propagation.▪ Develop graphene transfer technique to introduce a thin graphene layer under Langmuir-Blodgett assembled PS microspheres	

Indian Institute of Technology (IIT) Bombay <i>Summer Intern, S.D. Sharma Cardiovascular Lab, Aerospace Engineering</i>	Mumbai, India May 2014 – July 2014
<ul style="list-style-type: none">▪ Computational fluid dynamic simulations using ANSYS to model cardiovascular blood flow at artery junctions pre and post Fontan open heart surgery procedure.	

PROJECTS

Product Development, Management and Entrepreneurship	Stanford University
<ul style="list-style-type: none">▪ <i>BLOOMA – Last mile consumer package delivery system</i>	Sept 2016 - June 2017
<p><i>Collaborations: SAP SE; University of Applied Sciences Mannheim, Germany</i></p> <ul style="list-style-type: none">– Concept video: https://www.youtube.com/watch?v=18f7GaQVFcU– Full text: https://searchworks.stanford.edu/view/kq227vw2007 <p>A crowd-sourced package receiving system for individuals and communities making every attempt successful to optimize delivery system for couriers and e-commerce companies. Keeping in mind safety and security using a centrally controllable smart locking system, motion sensors, and live app notifications for safe access to houses for parcel delivery.</p> <ul style="list-style-type: none">– Developed from scratch through a user centered product development approach using design principles, user research and iterative product development strategies.– Prototyped and presented the concept at the MEDG Stanford design EXPERience Fair.	
<ul style="list-style-type: none">▪ <i>FitNew – Fitness made social</i>	Fall 2019
<ul style="list-style-type: none">– Use design process and user research to developed MVP for social networking through event app	

- Develop launch plan, monetization strategies, customer acquisition and lifetime costs, grabber and holder ecosystem, and 1-N expansion strategy for the product.
- Designing products for developing countries – healthcare

Collaboration: Caltech, USA

 - Design process, user research, ideation, and prototyping products to improve health and efficiency of manual labor force operating at open construction sites in India

IIT Gandhinagar
Spring 2014

- Data analysis and data mining** **Stanford University**
Spring 2020
- Working with data – tools and techniques*
- Process, visualize and analyze crunchbase startup market data using tableau, python pandas and google spreadsheets
 - Implement machine learning and data mining on user movie ratings dataset to predict missing values.

- Machine Learning, Natural Language Processing and Deep Learning, Reinforcement Learning** **Stanford University**
Fall 2016
- Motion planning in unfamiliar environments
 - Neural networks based RL to implement Roomba-like path finding for simulated bot.
 - Word vector representations using character n-grams Winter 2017
 - Develop word vector representations using component character n-grams as a strategy to model unfamiliar, compound and sandhi words.
 - Markov decision process model for exploding kittens Fall 2018
 - Two player self-help RL to learning strategies for the game using neural networks and monte-carlo simulations

TECHNICAL SKILLS

- Design thinking, product management, accounting, machine learning
- Python, Matlab, client-side web programming in HTML, CSS, javascript, basic programming C, Java, SQL, R, nodejs
- Tableau, Autodesk Inventor
- Scanning electron microscopy, transmission electron microscopy, in-situ and ex-situ nanoindentations, rheometry, colloidal synthesis of nanoparticles, molecular dynamic simulations

CONFERENCES

- Minerals, Metals & Materials Society (TMS), San Diego California – Oral Presentation 2020
- Society of Engineering Sciences (SES), St. Louis Missouri – Oral Presentation 2019
- Stanford System-X Alliance, Stanford – Poster presentation 2019
- Gordan Research Conference (GRC), Lewiston Maine – Poster presentation 2018

ADDITIONAL

- Fluent in English, Hindi, Marathi, familiarity with Spanish and Mandarin
- Health freak loving food, gym, yoga and swimming, social dancer fond of waltz, polka, and swing; favorite pastime *keyboard, guitar, and painting*; Bollywood buff and music lover.
- Additional Select Honors and Scholarships
 - Department of Science and Technology Gov. of India, [KVPY](#) Fellowship 2011
 - Department of Science and Technology Gov. of India, [INSPIRE](#) Fellowship 2012
 - NCERT Gov. of India, [NTSE](#) Scholarship 2008
- Teaching Assistantships
 - ME 241: Mechanical Behavior of Nanomaterials (MATSCI 241)
Theoretical mechanics for 0D, 1D and 2D nanomaterials, origin of stresses, deformation, elasticity, plasticity, and fracture in nanomaterials, **Stanford University**
Fall 2018
 - ES 101: Engineering Graphics
Orthographic, isometric, auxiliary & section views, perspective projections, 3D modelling with Autodesk Inventor **IIT Gandhinagar**
Fall 2013