

- Collaborating with clinicians at Yale Medical School and researchers at University of Washington to develop cardiac motion tracking algorithms (from Echocardiographic images) that can be used for the diagnosis and treatment of cardiovascular diseases.
- Developed a MATLAB GUI for interactive contouring which is currently also used by 2 other lab members. This eliminated the need of a non-MATLAB software and streamlined overall workflow while dealing with large 3D+time image datasets.
- Used PCA and SVM to classify healthy and unhealthy heart surfaces for a challenge at the STACOM workshop in MICCAI 2015 conference – results were 3rd best overall (out of 11 groups).
- Currently using CNNs (convolutional neural nets) to match 3D image patches for tracking purposes. This approach has significantly outperformed other handcrafted feature matching approaches.
- Presented results to clinicians and collaborators on a monthly basis. Reported methods and outcomes in academic conferences resulting in posters and peer-reviewed conference proceedings.

Lafayette College*Honors thesis research project***New Haven, CT**

Fall 2012 – Spring 2012

- Demonstrated, via computer simulations, the feasibility of developing band pass filters using memristors (a novel semiconductor device) at integrated circuit level.

EXTRA-CIRRICULAR EXPERIENCE**Yale University***Teaching fellow***New Haven, CT**

Aug 2013 – Dec 2016

- Served as a Teaching assistant for: Computing for Engineers and Scientists (ENAS 151), Computational methods for the Analysis and Modeling of Biological Data (CPSC 453), etc.
- Conduct office hours/help sessions and grade assignments for about 10-20 students weekly.

Hackathons*Yale Healthcare Hackathon*

October 2014

- In a team of 4, conceived and developed technical and business plans for an app for dental health diagnosis and management aimed at low income communities in developing countries. Was awarded the highest social impact award.

Yale Healthcare Hackathon

January 2017

- Developed a deep learning method to predict the presence of malignant nodules in 3D Lung CT images.
- Augmented the deep learning model with radiologists' eye tracking data to further improve accuracy.

SELECTED PUBLICATIONS*Peer reviewed conference proceedings*

- Parajuli, Nripesh, et al. "Integrated Dynamic Shape Tracking and RF Speckle Tracking for Cardiac Motion Analysis." International Conference on Medical Image Computing and Computer-Assisted Intervention. Springer International Publishing, 2016.
- Parajuli, Nripesh, Allen Lu, and James S. Duncan. "Left Ventricle Classification Using Active Shape Model and Support Vector Machine." Statistical Atlases and Computational Models of the Heart. Imaging and Modeling Challenges. Springer International Publishing, 2015. 154-161.

ADDITIONAL INFORMATION**Languages:** Nepali (native), English (fluent).**Interests:** Soccer, hiking, camping, squash and coding projects in Python and Android.