

## Education

### Cornell University

Master of Engineering- Biomedical Engineering, GPA-3.5/4

**Ithaca, NY**

2014-2015

### Manipal University

Bachelor of Engineering- Biomedical Engineering, GPA -8.7/10

**Manipal, India**

2008-2012

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## Experience

### Columbia University

*Research Staff Assistant under Professor Donald C. Hood*

**New York, NY**

2015-Present

- Developed a custom report using Topcon Maestro frequency domain widefield OCT (Optical Coherence Tomography) scans of the retina, based on the Hood Lab research, to detect and diagnose Glaucoma
- Created a module using a pair of Topcon swept source widefield OCT scans to qualitatively detect and follow Glaucoma progression
- Collaborated with Dr. Randy Kardon at the University of Iowa to develop a custom report to detect Glaucoma using the Zeiss Cirrus OCT cube scans of the Macula and Disc regions of the retina
- Developed alternative models to characterize circumpapillary Retinal Nerve Fiber Layer (pRNFL) damage in widespread or diffuse glaucoma. Presented a poster on this project at the ARVO (Association of Research in Vision and Ophthalmology) annual conference in Baltimore, in May 2017. Currently, extending the models to examine normal population variations as well as the effects of aging on pRNFL thickness among healthy normal subjects
- Developed methods to minimize false positives caused by artifacts and normal anatomical variations in a custom one-page Glaucoma report using Topcon Maestro frequency domain OCT scans of the retina
- Performed routine upkeep and maintenance of lab equipment including OCT scanners and computing systems in the lab and troubleshooting IT issues alongside Columbia IT

### M.H. Al Shaya Co.

*Information Processing Administrator*

**Kuwait City, Kuwait**

2012–2014

- Handled IT troubleshooting, inventory and cataloguing for brands like Victoria's Secret and Pottery Barn, and transfer of inventory in G.O.L.D, a contemporary global logistics tool
- Trained two new recruits and five consultants in inventory database management and cataloguing

### Rutgers University (previously UMDNJ)

*Research Trainee under Professor Dinesh Mital*

**Newark, NJ**

June 2011

- Predicted demographics that require immediate medical attention in an emergency room, using SPSS
- Conducted descriptive data analysis and examined the utility of statistical analysis to improve public health

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## Academic Projects

*Master of Engineering Project– Wearable Health Assessment Device, Cornell University*

2014–2015

- Designed a wearable ECG and lung sound analysis system which would facilitate the self-diagnosis of aberrant sensations in the chest
- Developed the design and product specifications of the device and developed the guidelines to facilitate potential FDA approval of the same
- Developed the Android interface that links the system to a smart device
- Presented design at New York State Business Plan Competition Finals (April 2015), Albany, NY, after competing against thirty teams in the semifinals held in Ithaca, NY

*A System for the Acquisition and Analysis of Lung Sounds, Cornell University*

2015

- Designed the circuit for amplification and filtering of lung sounds, acquired from a simple electret microphone
- Analyzed acquired signals on LabView and classified them based on pathology

*Analysis of Functional MRI of the motor cortex, Cornell University*

2014

- Isolated activation regions in the brain of the subject while performing finger tapping exercise, through Statistical Parametric Modelling

*Health App Development, Cornell University*

2014

- Created the user interface of an Android app that tracks the impact of smartphone usage on user's health
- Designed and evaluated features to gently encourage users to spend less time on the phone

*Navigational Aid for the Visually Impaired, Manipal University*

2012

- Created an ultrasonic obstacle detector, using a simple ultrasound sensor and an 8051 microcontroller
- Prototyped the device for less than \$50. Tested the device in controlled conditions with a 90% accuracy rate

*Morphological image analysis of tumors in the breast tissue, Manipal University*

2011

- Used MATLAB to isolate and analyze breast tumors from mammograms
- Performed cell count, density analysis and isolated the boundaries of the tumor

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## **Skills**

MATLAB, SPSS, Python

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## **Publications**

**R. Rajshekhar, L. Shi, R. Ritch, D. Hood**

*Poster- ARVO 2017*

A test of alternative models of early widespread glaucomatous damage

**Z. Wu, D. Weng, R. Rajshekhar, R. Ritch, D. Hood**

*Manuscript- American Journal of Ophthalmology*

Effectiveness of a Qualitative Approach Towards Evaluating Optical Coherence Tomography Imaging for Detecting Glaucomatous Damage

**K. Tsang, L. Shi, R. Rajshekhar, D. Hood et al**

*Poster- ARVO 2017*

Does the raphe-fovea-disc angle contribute to the basis of the ISNT rule?

**L. Shi, C. Gustavo De Moreas, D. Weng, R. Rajshekhar, R. Ritch, D. Hood**

*Poster- ARVO 2017*

Determinants of inter-eye asymmetry in circumpapillary retinal nerve fiber layer (cpRNFL) thickness in healthy and glaucoma patients

**L. Silva, Y. Suvan, R. Jarukasetphon, R. Rajshekhar, et al**

*Poster- ARVO 2017*

Retinal Ganglion Cell layer by Fourier-domain Optical Coherence Tomography and microvasculature density by Optical Coherence Tomography Angiography at the macular region in glaucoma

**A. Sun, C. Gustavo De Moreas, R. Jarukasetphon, R. Rajshekhar, et al**

*Poster- ARVO 2017*

Systems for staging glaucoma based upon 24-2 visual fields have a fundamental flaw

**N. De Cuir, M. Mavrommatis, et al including R. Rajshekhar**

*Poster- ARVO 2016*

Paravascular defects and epiretinal membranes are seen on en-face slab OCT images in eyes with early glaucoma