

# RESUME

## PERSONAL DATA

Name: Lalith Nag, Sharan Gururaj  
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Date, Place-of-Birth: 27.02.1993, Chennai (India)



I'm a medical systems engineer focused on deep learning and computer vision for healthcare applications – in particular registration, segmentation and depth-reconstruction.

## CURRENT POSITION

Apr 2019 to present      **Master's Thesis Student**  
Research Project "Computer-based Quantification of Reconstructive Mitral Valve Surgery" at Mannheim University of Applied Sciences and Heidelberg University Hospital, Germany  
Depth estimation in stereo-endoscopy using deep learning for application in mitral valve reconstruction surgery. Frameworks used: Tensorflow, PyTorch, OpenCV

## EDUCATION

Apr 2017 to present      **Master's Degree, M.Sc. in Medical Systems Engineering**  
Otto von Guericke University, Magdeburg (Germany)  
Specialisation: Deep Learning, Computer Vision, Computer-assisted Surgeries & Interventions  
Current grade: 1.6/4 (Max.: 1.0, Min. passing: 4.0)

Jul 2010 to May 2014      **Bachelor's Degree, B.E. in Biomedical Engineering**  
Manipal Institute of Technology, Karnataka (India)  
Specialisation: Pattern Recognition, Medical Image and Signal Processing  
Grade: 8.69/10 (Max.: 10.0, Min. passing: 5.0)

Jun 2008 to May 2010      **All India Senior Secondary School Certificate**  
Central Board of Secondary Education, Chennai (India)  
Specialisation: Computer Science, Mathematics, Physics, Chemistry  
Grade: 89.6% (Max.: 100%, Min. passing: 33%)

## PROJECTS

- Apr 2018 to Jul 2018      **Landmark Detection in Echocardiography**  
Automatic segmentation of mitral valve in 3D using U-Net architecture- pre-processing with MeVisLab & ParaView.
- Oct 2017 to Jun 2018      **Depth-mapping for stereo-endoscopy**  
Stereo-reconstruction using computer vision techniques from surgical data, implemented using OpenCV libraries on C++.

## PROFESSIONAL EXPERIENCE

- Oct 2018 to Mar 2019      **Internship**  
Research Project "Computer-based Quantification of Reconstructive Mitral Valve Surgery" at Mannheim University of Applied Sciences and Heidelberg University Hospital, Germany  
Depth estimation in stereo-endoscopy using deep learning for application in mitral valve reconstruction surgery. Frameworks used: Tensorflow, PyTorch, OpenCV
- Jan 2018 to Sep 2018      **Student Research Assistant**  
Otto Von Guericke Universität, Magdeburg (Germany)  
Support of research in the *Computer Assisted Surgeries* research group; multi-modal registration of MRI & US data, medical visualisation using MeVisLab + python, 3D slicer.
- Nov 2014 to Mar 2017      **Manager-Strategy**  
eHelium Advisory Service Private Limited, Chennai (India)  
Market analysis, identifying gaps & opportunities in building a scalable online education platform for entry-level talent pool in Indian service sector.
- Jan 2014 to May 2014      **Trainee**  
Institute of Nuclear Medicine & Allied Sciences, Delhi (India)  
Bachelor thesis on *Cognitive State Assessment using EEG Signals*. Developed a classifier to assess cognitive-state using 14-channel EEG signals in a war-like multi-tasking scenario.

## SKILLS

Software: Python (Keras+Tf, PyTorch), C++, OpenCV, MeVis Lab, 3D Slicer, MS Office

Languages: **English**: Proficient in Speaking, Writing (C2)

**Deutsch**: Good in Speaking, Writing (B2), **Tamil**: Native proficiency



Heidelberg, 26.05.2019