

# BADRINATH SINGHAL

House No. 1, Latia Garo Path, Bishnu Rabha Path, Beltola Tinali, Guwahati, Assam, India 781028  
(+91)8486508149 ◇ badrinath2602@gmail.com ◇ www.linkedin.com/in/badrinath-s

## EDUCATION

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- **Indian Institute of Technology Guwahati** July 2014 - June 2018  
Bachelor of Technology CPI: 8.36/10  
Department of Electronics and Electrical Engineering

## WORK EXPERIENCE

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- **Synapsica Technologies, Bangalore** Oct 2018 - Present  
*AI Scientist*
- Developed Synapsica Spindle which assists radiologists to diagnose Spinal Stenosis by measuring spinal canal diameter, detecting vertebrae, lumbar discs in MRI scans using computer vision and deep learning.
- **Computer Vision and Fuzzy Systems Lab** May 2017 - July 2017  
*Hanyang University*
- Integrated Multi-ELASC Algorithm with IT2 Fuzzy C-Means Clustering Algorithm to give Multi-IT2 Fuzzy C-Means Algorithm.
- **Ikegami Lab** May 2016 - July 2016  
*The University of Tokyo*
- Worked on implementing DCGAN on celebrity faces datasets and exploring linear operations in latent vector in z space.

## PUBLICATIONS

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- Uddeshya Upadhyay, Badrinath Singhal, Meenakshi Singh, "*Spinal Stenosis Detection in MRI using Modular Coordinate Convolutional Attention Networks*", Oral Presentation, IEEE International Joint Conference on Neural Networks (IJCNN) 2019, Budapest, Hungary
- Shashank Huddedar, Mayank Kagliwal, Badrinath Singhal, "*Performance analysis of a Novel IT2 FCM Algorithm*", Oral Presentation, IEEE World Congress on Computational Intelligence (WCCI) 2018, Rio, Brazil.

## PROJECTS

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- **Efficient VLSI Implementation of SVD**  
*Bachelor Thesis Project*  
*Prof. Shaikh Rafi Ahmed, Dept. of EEE, IIT Guwahati*  
Extended implementation of calculating Singular Spectrum Analysis(SSA) using CORDIC algorithm for 2x2 matrix to nxn matrix.
- **Autonomous Intelligent Robot**  
*Robotics Club, IIT Guwahati*  
Built a self-navigating bot which is able to map the environment, localize itself and reach the given goal position autonomously using Dijkstras algorithm. The bot was implemented using Robot Operating System (ROS).

## TECHNICAL STRENGTHS

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Pytorch, Python, OpenCV, Matlab, C, C++, Latex

## ACADEMIC ACHIEVEMENTS

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- Joint Entrance Examination 2014: Secured position in top 1% among 150000 students.
- 5<sup>th</sup> Rank in Guwahati region for AISSCE 2013.
- Offered Merit cum Means (McM) scholarship by IIT Guwahati for 3 consecutive years. 1
- 1<sup>st</sup> in Algorithmic Trading competition during Kriti 2016, IIT Guwahati.
- 48<sup>th</sup> state rank in JEE Mains 2014.