

# ADITYA WAGH

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Links: [Linkedin](#)  
[Github](#)

## EDUCATION

- Birla Institute of Technology and Science (BITS) Pilani**

**Pilani, India**

*Bachelor of Engineering with Honors in Electronics and Instrumentation*

*Aug 2015 – Jul 2019*

GPA: 5.55

*Relevant courses:* Computer Programming, Probability & Statistics, Neural Networks and Fuzzy Logic, Discrete Mathematics, Digital Signal Processing, Digital Design, Microprocessors and Interfacing, Computer Architecture

## CERTIFICATIONS

- Neural Networks and Deep Learning**

*deeplearning.ai*

**Coursera**

*August, 2018*

## WORK EXPERIENCE

- Integrated Systems Lab**

*Research Assistant*

**Central Electronics Engineering Research Institute, Pilani**

*Jul 2018 – Dec 2018*

*Project:* Detection of faulty power transmission lines using Region Proposal Convolutional Neural Networks(RCNNs)

- Project focused on decreasing costs and safety of inspecting power transmission lines using unmanned drones, instead of manual helicopter inspection.
- Part of a team responsible for annotating a dataset of 8000 RGB and Infrared images of power transmission cables. Used VIA Image Annotator for annotation.
- Responsible for modelling, training and optimising a Convolutional Neural Network to detect healthy power lines in those images.
- Trained a masked region proposal convolutional neural network having a ResNet-101 and FPN Backbone.

## PROJECTS

- Variable Computation in Recurrent Neural Networks (2017):**

- Modified a RNN model to make it learn to vary the amount of computation according to the sequence that they process.
- Implemented a scheduler for the RNN unit which decides the computation required at the current timestep.
- Reduced the number of operations for bit-level language modelling to around 50% compared to normal RNN unit.

- Microphone Signal Conditioning System (2017):**

- Designed a signal conditioning circuit for a microphone using OPAMPS.
- Utilised the condenser microphone as a capacitance in the RC Filter Circuit.
- Interfaced the circuit with the computer using NI-DAQmx data acquisition card and created a UI in LabVIEW to interpret the noisy and filtered signals.

- Finite Impulse Response filter design using an adjustable window filter (2017):**

- Implemented an adjustable window function based on the combination of Blackman and Lanczos window.
- Achieved a 75% better side-lobe roll off ratio than Lanczos window.
- Denoised an ECG Signal using this filter.

## POSITIONS OF RESPONSIBILITY

- Vice-Chairperson**

*IEEE Student Branch, BITS Pilani*

*Jul 2017 - May 2018*

Appointed as the Vice Chairperson of the IEEE Student Branch at BITS Pilani

- Organised IEEE affiliated events like conclaves, workshops and various technical events throughout the year.
- Worked on promoting IEEE Student memberships in the campus by organising membership drives explaining it's benefits.
- Responsible for setting up the IEEE hosted website for the chapter.
- Conceived the organisational hierarchy of the chapter, introducing various managerial and technical posts.
- Authored and published the first issue of IEEE Insight, the monthly newsletter of the chapter.

- **Member, Governing Council(GC)**

*Aug 2018 - July 2019*

*Society for Students Mess Services, BITS Pilani*

Elected as the Mess Representative of the Ranapratap-Ashok Mess which served more than 400 students. Part of the Quality, Health & Safety Environment(QHSE) committee and the Human Resource committee of the GC.

- **Mess Representative:** Responsible for sanctioning leaves of the workers, collecting feedback and taking necessary actions.
- **QHSE:** Drafted a QHSE framework for SSMS activities and conducted regular audits every semester.
- **HR:** Responsible for performance appraisals, providing education/medical loans and managing internal worker conflicts.

## TECHNICAL PROFICIENCY

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- **Development Languages:** Python, C, , C++, MATLAB, Verilog, bash, markdown,  $\LaTeX$
- **Frameworks and Libraries:** Keras, Tensorflow, OpenCV, Linux, Git
- **Application Softwares:** MATLAB, Simulink, LabVIEW