

# Aditya Wagh

## Curriculum Vitae

✉ [adityamwagh@gmail.com](mailto:adityamwagh@gmail.com)  
📄 <https://adityawagh.ml>  
🌐 [adityamwagh](#)

*On a quest to make intelligent machines!*

## Education

- 2015 - 2019 **BITS Pilani**, *B.E.(Hons) in Electronics and Instrumentation Engineering.*
- 2003 - 2015 **LVH College**, *Higher Secondary Certificate*, Nashik, India.  
Marks: 85.69%
- 2009 - 2013 **Symbiosis School**, *All India Secondary School Examination.*  
GPA: 10/10

## Experience

### Professional

- May '17 - Jul '17 **The Ramco Cements Ltd**, *Jaggayapeta, India.*  
Software Engineering Intern  
Advisor: Mr. Chengal Rao  
Focus: Full-stack design of an inventory management web-application.
- May '18 - Jul '18 **Apras Polymers & Engineering Co.Pvt. Ltd**, *Nashik, India.*  
Software Engineering Intern  
Supervisor: Mr. Prakash Dhanokar  
Focus: Modern and responsive business website design.

### Academic

- Dec'18 - May '19 **Central Electronics Engineering Research Institute**, *Pilani, India.*  
*Undergraduate Research Assistant*  
Advisor: Dr. Sumeet Saurav  
Focus: ConvNet models for orientation-aware object detection on aerial images.
- Jul '18 - Dec '18 **Central Electronics Engineering Research Institute**, *Pilani, India.*  
*Undergraduate Research Intern*  
Advisor: Dr. Sumeet Saurav  
Focus: Instance segmentation models for real-time power-cable fault detection using autonomous drones.
- Aug '17 - Dec '17 **BITS Pilani**, *Pilani, India.*  
*Undergraduate Research Assistant*  
Advisor: Prof. Anu Gupta  
Focus: Design of fault tolerant Static RAM cells.

## Projects

- 2017 **Variable Computation in Recurrent Neural Networks:**
- Modified a RNN model to reduce the amount of required computation by ignoring redundant sequences.
  - Implemented a scheduler for the RNN unit which decides the computation required at the current time-step.
  - Reduced the number of operations for bit-level language modelling by 50%.
- 2019 **RISC Processor Design using HDL**
- Designed, programmed and tested 16-bit multi-cycle processor for a given set of instructions and constraints.
  - Followed modular approach for programming the processor and its test bench, by dividing it into sub-modules such as memory, register file, ALU and control unit.

2018 **FIR filter design using an adjustable window function.**

- 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.

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## Technical Skills

**Languages** Python · C · C++ · MATLAB · Shell ·  $\text{\LaTeX}$  · HTML · CSS · JavaScript

**Frameworks** Keras · TensorFlow · PyTorch · OpenCV · Bootstrap · Git

**Softwares** Simulink · LTspice · LabVIEW · EagleCAD · Proteus

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## Relevant Coursework

**Machine Learning** Machine Learning · Deep Learning · TensorFlow in Practice · Mathematics for Machine Learning · Neural Networks & Fuzzy Logic

**Mathematics** Linear Algebra · Calculus · Differential Equations · Probability & Statistics · Discrete Mathematics

**EECS** Control systems · Signals & Systems · Digital Signal Processing · Digital Electronics · Computer Architecture · Analog Electronics · Microprocessors & Interfacing

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## Achievements

2015 Amongst the top 1.5% students in the India in Joint Entrance Examination - Mains

2015 Amongst the top 5% students in the India in Joint Entrance Examination - Advanced

2014 Amongst the top 300 students selected for INPhO (Indian National Physics Olympiad)

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## Extracurriculars

Jul '17 - May '18 **IEEE Student Branch, BITS Pilani**, *Vice-Chairperson*, Pilani, India.

Organized technical workshops, talks, and various student events throughout the year.

Aug '18 - Jul '19 **Society for Students Mess Services, BITS Pilani**, *Governing Council Member*, Pilani, India.

Responsible for drafting the food menu and coordinating with third party contractors to prepare food. Also drafted a quality, health & safety environment framework and conducted regular safety audits.

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## References

Dr. Syed Zafaruddin, Assistant Professor, BITS Pilani

Dr. Sumeet Saurav, Scientist, Intelligent Systems Group, CEERI Pilani