Aditya Wagh

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Education

- **Birla Institute of Technology and Science (BITS), Pilani**   **Pilani, India**
  Bachelor of Engineering with Honors in Electronics and Instrumentation, GPA*: 5.55/10*   *Aug 2015 – Jul 2019*
  <u>*Relevant coursework*</u>: Neural Networks and Fuzzy Logic, Computer Architecture, Data Communication & Networks, Digital Signal Processing, Control Systems, Microprocessors and Interfacing, Discrete Mathematics, Computer Programming, Probability & Statistics, Linear Algebra
- **LVH Arts, Science & Commerce College**   **Nashik, India**
  Higher Secondary Ceritificate, MSBSHSE, Marks*: 85.69%*   *Aug 2013 – June 2015*
- **Symbiosis School**   **Nashik, India**
  All India Secondary School Examination, CBSE, GPA*: 10/10*   *Jun 2009 – May 2013*

Technical Proficiency

- **Development Languages** Python, C, C++, MATLAB, Shell, LaTeX, HTML, CSS, JavaScript
- **Tools, Frameworks and Libraries** Keras, TensorFlow, PyTorch, OpenCV, MATLAB, Simulink, LabVIEW, Bootstrap, Git

Work Experience

- **Research Assistant, Central Electronics Engineering Research Institute, Pilani**   Jul 2018 – Dec 2018
  Project: Detection of faulty power transmission lines from aerial images using Mask R-CNN
  - Reviewed and compared the state-of-the-art instance segmentation models for aerial images.
  - Improved mAP by 4.31 over other existing models using salience biased loss function with the **Mask RCNN** architecture.
  - Contributed in development of software pipeline to annotate 8000+ Infrared and RBD images TV-L power-line dataset.
- **Software Intern, Apras Polymers & Engineering Co.Pvt. Ltd, Nashik**   May 2018 – Jul 2018
  Project: A Business2Consumer website using Bootstrap and Jekyll.
  - Created the UI of the website using the **Figma tool** and developed the front end using the **Bootstrap** CSS framework.
  - Generated the skeleton of the website using **HTML** and **Jekyll v4** and animated the components using **animate.css**
- **Software Intern, The Ramco Cements Ltd, Jaggayapeta**   May 2017 – Jul 2017
  Project: Design of a Inventory Management Web application for the Plant
  - Designed the UI of the portal using the **Figma tool** and wrote the front end using **.NET**(ASP.NET and VB.NET)
  - Designed a relational database to store inventory details using **Microsoft SQL Server**.

Projects

- **Oriented Object Detection on Aerial Images**
  - Researched object detection methods for oriented text detection
  - Achieved around 65 mAP on the DOTA dataset by transfer learning on the R2CNN model.
- **Variable Computation in Recurrent Neural Networks**
  - 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.
- **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.
- **Finite Impulse Response filter design using an adjustable window filter**
  - 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.

Volunteer Experience

- **Vice-Chairperson, IEEE Student Branch, BITS Pilani**   Jul 2017 - May 2018
  - Promoted IEEE Student memberships by 30% in the campus by organising membership drives, workshops and technical events
  - Responsible for setting up the IEEE hosted website for the chapter and IEEE Insight, the monthly newsletter of the chapter.
  - Revamped the organisational hierarchy of the chapter, introducing various managerial and technical posts.
- **Governing Council Member, Society for Students Mess Services, BITS Pilani**   Aug 2018 - July 2019
  - **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.

Certifications

Introduction to Python(Coding Ninjas); **Mathematics for Machine Learning**(Coursera); **Deep Learning**(Coursera); **Introduction to TensorFlow**(Coursera); **Convolutional Neural Networks in TensorFlow**(Coursera)