

# Aditya Pande

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## EDUCATION

### **BITS PILANI, PILANI CAMPUS**

B.E.(HONS) MANUFACTURING

ENGINEERING

July 2017 | Pilani, RJ, India

CGPA: 7.6/10

### **SOMALWAR NIKALAS**

XII GRADE, MAHARASHTRA STATE

BOARD

July 2013 | Nagpur, MH, India

Score : 88 %

### **CENTRE POINT SCHOOL**

X GRADE, CBSE

July 2011 | Nagpur, MH, India

CGPA: 10/10

## LINKS

Github:// [adityapande-1995](#)

LinkedIn:// [aditya-pande](#)

Google Scholar:// [Aditya Pande](#)

## COURSEWORK

### **UNDERGRADUATE**

Robotics

Mechatronics

Micro Electro-Mechanical Systems

Kinematics and dynamics of machines

Data Structures through Python

Neural networks and Fuzzy Logic

Image Processing

Machine Learning

Engineering Optimization

Computer Aided Design

Computer Aided Manufacturing

## SKILLS

### **PROGRAMMING**

Languages

Python • C++ • Matlab • Javascript •

Golang

Tools and libraries

Raspberry Pi • Linux • Numpy • p5.js •

OpenGL • L<sup>A</sup>T<sub>E</sub>X • Tensorflow-Keras •

OpenCV

### **MECHANICAL**

CAD, CAM

Solidworks • AutoCAD • PTC Creo

## EXPERIENCE

### **HERO MOTOCORP | GRADUATE ENGINEERING TRAINEE**

June 2017 – April 2018 | Neemrana, Rajasthan, India

- G.E.T at Maintenance and automation department at Global Parts Centre (G.P.C) warehouse.
- Worked with Muratec automatic cranes, MI-10 servers, rail guided vehicles, automatic conveyors, Unishuttle vehicles, FUJI packaging machines.
- Worked with Mitsubishi PLCs, HMIs, Siemens Scalance devices, Panasonic S-link device.
- Responsible for developing CAD models and testing spares, inventory management, process troubleshooting using MI-10 and WMS softwares.
- Part of the kaizen team which increased throughput of Dispatch stations from 27 to 60 pallets per hour.
- Only G.E.T from the batch, youngest engineer in G.P.C to receive "Achiever's Award" by the Vice President-Head Parts Business for the kaizen.

### **MAHLE ENGINE COMPONENTS | ENGINEERING INTERN**

May 2015 – July 2015 | Pithampur, Indore, Madhya Pradesh, India

- Studied camshaft machining process and machining lines.
- Designed a low cost automation solution for transferring camshafts from one CNC to other based on the Klann mechanism.

## RESEARCH

### **GESTURE CONTROL OF ABB 1410 ROBOT | BACHELOR THESIS**

Jan 2017 – April 2017 | BITS Pilani, Rajasthan, India

- Developed a program over existing C# based RobotStudio software to control ABB 1410 via custom trained hand gestures and coloured objects.
- Implemented concepts of stereo vision, Convolutional neural networks, Viola Jones, camshift, histogram backprojection algorithms to improve performance.
- **Publication** : Telang, Sujeet, B. K. Rout, and Aditya Pande. "Implementation of cascade classifier technique for gesture control of an ABB industrial manipulator." 2018 2nd International Conference on Inventive Systems and Control (ICISC). IEEE, 2018.

## EXTRACURRICULAR

### **INSPIRED KARTERS - BAJA | POWERTRAIN SUBSYSTEM HEAD**

Sep 2013 – April 2016 | Automotive Club at BITS Pilani, RJ, India

- Implemented sequential stickshift mechanism on Mahindra Alfa gearbox, AI-6061 wheel assemblies and coupling, later CVT, JTEKT Torsen differential, lightweight composite driveshafts for the first time in team.
- Secured 5th rank in Design, 6th in cost event 4th in weight pull, overall 8th rank at Baja Student India-2015.

### **MANUFACTURING ENGINEERING ASSOCIATION | CORE TEAM MEMBER**

Sep 2013 – April 2017 | Department Association at BITS Pilani, RJ, India

- Organised workshops for Arduino and Solidworks training, events during technical festival.
- Garnered 200+ registrations for "Reverse Engineering" event at APOGEE 2016.

## PROJECTS

### **LOW COST AUTOMATION | BOSCH INSCRIBE 2015, BOSCH INDIA'S ENGINEERING DESIGN COMPETITION**

Nov 2015 | Bangalore, KA, India

- Presented a project on how simple kinematic mechanisms can be used for industrial automation.
- Reached final pitching round from 25+ colleges shortlisted from all over the country.

### **REDUNDANCY IN STEGANOGRAPHY | APOGEE 2015, ANNUAL TECHNICAL FESTIVAL AT BITS PILANI**

March 2015 | Pilani, RJ, India

- Presented a project on introducing redundancy in steganography using Python, under Manufacturing Engineering Department.
- This would enable the hidden data to survive cropping and resizing.

### **PATH PLANNING ALGORITHMS | COURSE PROJECT, COMPUTER AIDED DESIGN**

2015 | Pilani, RJ, India

- Did a course project to demonstrate and visualize popular path planning algorithms like V-graph, artificial potential field, A\*, and Dijkstra's in Python.
- Demonstrated the ability of these algorithms to solve mazes, their applications in path planning for robotics and solving game trees.

### **DECISION MAKING AND RELIABILITY ANALYSIS USING FUZZY ANALYTICAL NETWORK PROCESS**

| DESIGN ORIENTED PROJECT AT BITS PILANI

2015 | Pilani, RJ, India

- Designed a GUI-based program in Python to implement fuzzy ANP technique to be used for reliability analysis of CNC lathe machine and general decision making.
- This method uses empirical data or opinions from experts in the form of fuzzy "relative importance" of criteria with respect to each other to compute decisions.

### **SOLVING FLAPPY BIRD USING NEUROEVOLUTION | GITHUB PROJECT**

August 2018

- Implemented a clone of the "flappy bird" game in pygame library, and solved using neural networks implemented from scratch in numpy. (Github link)
- Neural networks were trained using evolutionary algorithms instead of traditional backpropagation.

## SOCIETIES AND CLUBS AT BITS PILANI

2013-16	Powertrain subsystem head	Inspired Karters BAJA
2013-16	Member	Society of Automotive Engineers (SAE) BITS Pilani Chapter
2013-17	Core team member	Manufacturing Engineering association
2013-17	Skit actor and event organizer	Maharashtra Mandal regional association
2013-14	Member	Astronomy Club

## ACHIEVEMENTS

2018	Achiever's award in innovation, Hero Motocorp.
2013	All India rank of 7220 in JEE (Advanced) 2013 among 150,000 candidates
2013	Top one percentile scores in XII grade board exams in Maharashtra State
2011	Third rank in school in X grade CBSE board exams.